

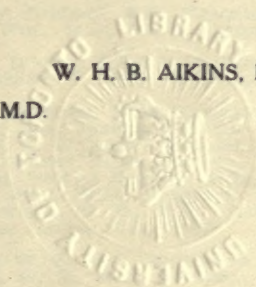
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The Canadian Practitioner and Review

ADAM H. WRIGHT, B.A., M.D.

W. H. B. AIKINS, M.D.

EDMUND E. KING, M.D.



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List of Contributors

Abbe, Robert, M.D., New York.
Adami, J. George, M.D., Montreal.
Aikins, W. H. B., M.D., Toronto.

Baines, Allen, M.D., Toronto.
Barling, Gilbert, M.B., Birmingham, Eng.
Bingham, G. A., M.D., Toronto.
Bradshaw, T. R., M.D., Liverpool, Eng.
Bramwell, Edwin, M.B., F.R.C.P., Edinburgh, Scotland.
Bruce, Mitchell, M.D., London, Eng.

Campbell, Colin, M.D., Toronto.
Chandra, Jogendar Lal, L.M.S., Calcutta.
Clarkson, F. A., M.D., Toronto.
Coulter, C. R., C.E., Ottawa.

Dock, George, M.D., New Orleans.
Donald, William M., M.D., Detroit.
Douglas, Charles, M.D., Detroit.
Duncan, James H., M.D., Chatham.
Duncan, J. T., M.D., Toronto.
Drier, E. Newton, M.D., Vancouver, B.C.

Fenton, Frederick, M.D., Toronto.
Fotheringham, J. T., M.D., Toronto.

Gordon, A. Knyvett, M.B., Manchester, Eng.
Greene, Miss Clara, Belleville.
Greig, W. J., M.D., Toronto.

Harrison, F. C., M.B., Toronto.
Hastings, Charles J., Toronto.

Hendrick, A. C., M.B., Toronto.
Hoag, David Edward, M.D., New York.
Horder, Thomas J., M.D., F.R.C.P., London, Eng.

Jones, Ernest, M.D., Toronto.

Kakels, M. S., M.D., New York.
King, Edmund E., M.D., Toronto.

Laitineu, Prof. Toar, M.D., Finland.
Le Fevre, Walter Irwin, M.D., Cleveland.
Loepir, Prof. Maurice, M.D., Paris, France.
Lowry, W. H., M.D., Toronto.

Macmurchy, Helen, M.D., Toronto.
Meyers, Campbell, M.D., Toronto.
Minns, Frederick S., M.B., Toronto.
Marquis, Doctor, Brantford.
McIlwraith, K. C., M.D., Toronto.
McLaughlin, Richard, D.D.S., Toronto.

Nasmith, Geo. G., Ph.D., Toronto.

O'Reilly, Brefney, M.D., Toronto.
Osler, Wm., M.D., F.R.S., Oxford, Eng.

Power, D'Arey, F.R.C.S., London, Eng.
Price-Brown, J., M.D., Toronto.

Rentoul, Robert, M.D., Liverpool, Eng.
Riddell, Hon. Justice William, Toronto.
Ross, J. F. W., M.D., Toronto.
Royce, Gilbert, M.D., Toronto.
Ryerson, George Sterling, M.D., Toronto.
Schott, Prof., M.D., Nauheim.
Shuttleworth, C. B., M.D., Toronto.
Sprague, James, M.D., Perth.

Thayer, W. S., M.D., Baltimore, Md.
Thistle, W. B., M.D., Toronto.

Whitby, Charles J., M.D.
Wickham, Louis, M.D., Paris, France.
Wilcox, Reynold Webb, M.D., New York.
Williams, Tom A., M.B., Washington, D.C.
Wood, J., M.D., Kingston.
Wright, Adam H., M.D., Toronto.

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TORONTO, JANUARY, 1910.

No. 1

Original Communications.

THE DIFFERENTIAL DIAGNOSIS OF PARAPLEGIA.*

BY ERNEST JONES, M.D., M.R.C.P., LOND.,

Demonstrator of Medicine and of Psychiatry, University of Toronto.

Gentlemen,—The importance of making a correct diagnosis in a case of paraplegia lies in the fact that it is a syndrome which may occur in a very great number of nervous affections, so that a clue to the cause of it is usually at the same time a clue to the recognition of the actual disease. I need hardly remind you that paraplegia is to be regarded as a group of symptoms, and never as a disease, though it may sometimes be the most prominent manifestation of the affection present. It may be defined as a weakness, more or less complete, of the lower extremities, not due to a peripheral affection or to a lesion of the lower neuronic system. We have thus at the outset to distinguish between true paraplegia and weakness of paraplegic distribution, just as in other cases we have to distinguish between true hemiplegia and weakness of hemiplegic distribution.

The distinction between true and pseudo-paraplegia can almost always be effected by considering the symptoms of the paraplegia, quite apart from other evidences of the cause of the affection. The features to be relied on for this purpose may be divided into three. First, the nature of the paralysis; secondly, the presence or absence of nutritive disturbances, and thirdly, the state of the reflexes. As in the first case I shall bring before you it is only possible to demonstrate the third of these, I shall only briefly mention the first two. The paralysis of true paraplegia differs from that of pseudo-paraplegia in being massive, and not limited to a small group of muscles; in being always more pronounced at the distal part of the limb, and in being

* An address delivered at the Toronto Orthopedic Hospital, Nov. 13, 1909.

distributed according to certain groups of functions rather than according to the anatomical innervation of muscles. Under the second heading, that relating to nutritive disturbances, are included wasting, various trophic changes, and changes in electrical excitability. Although in true paraplegia we may sometimes meet with a considerable wasting of muscles, more than can be attributed to mere disuse, still we never see the extensive atrophy, not only of the muscles but of all the structures of the limb, that so frequently occurs in the pseudo-paraplegias, particularly in those, like acute poliomyelitis, that are due to an affection of the anterior horn cells. Profound trophic changes are rare in true paraplegia, except in the variety caused by an extensive transverse lesion of the cord, and, finally, certain of the electrical changes, particularly that known as the reaction of degeneration, are highly characteristic of the pseudo-paraplegias caused by an affection of the lower motor neurone.

The first patient* we have to examine is a boy aged six. He was sent to the hospital from Manitoba last January. The paraplegia was then practically complete, but under re-educative treatment it has greatly improved. The early history of the case is very imperfect, but all the indications present point to the affection having been an infective myelitis in the lower dorsal region. He shews very well certain changes in the reflexes, which at once permit us to say that the lesion is one implicating the upper neuronie system of fibres. You will observe that the knee jerks are greatly exaggerated, and, further, that there is present a marked contralateral adductor reflex, i.e., a tap applied to either the patella or the adductor tubercle evokes a contraction of the adductor muscles of the opposite limb. These physical signs are never caused by an affection confined to the lower motor neurone. Their significance is amply confirmed by making the following further tests. Ankle clonus is easily to be obtained, and, as you see, this shews the characteristics of the true ankle clonus, namely, it is slow in rate, regular in both time and amplitude, persistent, not to be varied by changing the pressure or the position, and consists of an almost equal to-and-fro movement instead of a recurrent downward push.

Babinski's plantar sign is also well marked, and in this connection it is perhaps desirable to interpolate a few remarks on the question of technique in testing the plantar reflex, for the value of observations on this reflex, and therefore of con-

* For permission to demonstrate the case here mentioned, I am indebted to the courtesy of Dr. B. E. McKenzie, to whom I wish cordially to express my thanks.

clusions drawn from examination of it, are often quite vitiated by non-attention to this matter. In the first place, it is absolutely essential that the limb be quite relaxed when the reflex is being examined. For this purpose the recumbent posture is best suited, and the limb should be slightly everted, a pillow being, if necessary, placed under the outer side of the knee. It is never permissible to test the reflex when the patient is in a sitting posture and holding out the limb, though this is an only too common mode of procedure. It is however sometimes possible to test it in this posture if due care be taken adequately to support the foot and the upper part of the leg. In the second place, the sole should not be tickled, for this only evokes confusing semi-voluntary movements. The stimulus should be a firm, steady one, and, with an easily excited patient, it is best to press the thumb against the sole for a short time until he is accustomed to the contact and until the foot is completely at rest. Attention should now be concentrated on the big toe, and indeed on only the tarso-phalangeal joint of this toe; flexion or extension at this joint is the crucial thing. The abnormal response, known as Babinski's sign, differs from the normal one not only in being a movement of extension as well as of flexion, but also in being much slower and in being maintained for a much longer time. This is well seen in the present case. Movement of the big toe is, however, far from being the only characteristic of the sign; of the other points, three may be mentioned. Whether the other toes flex or extend is a matter of little interest, but an occurrence of much significance, seen more frequently in children, as here, is the spreading out of the toes that sometimes accompanies, or occasionally replaces, the extensor response of the big toe; this is known as the "fan" sign. Again, eversion of the foot at the mid-tarsal joint frequently replaces the normal inversion that occurs when the sole is stimulated. Lastly, with Babinski's sign, the tensor vaginae femoris responds later than the leg muscles, instead of, as in the normal, earlier than these.

Of the numerous new reflexes that have been discovered in the past few years, I should like to call your attention to two, for they are easily to be observed in the present case. The first is the "paradoxical reflex," first described by Schäfer some ten years ago. It is so called because pressure over a flexor muscle, the lower part of the gastrocnemius, elicits extension of the big toe, or even of all the toes; in the normal this elicits flexion of the toes. The sign has exactly the same significance as Babinski's sign, and indeed it has recently been shewn¹ that

the reflex is really a cutaneous one, for the same response can be obtained by pinching the skin over the gastrocnemius. The fact is that when Babinski's sign is well marked it can be obtained from stimulation over a far wider reflexogenous zone than the sole of the foot, for instance, from the front of the leg (Oppenheim's sign), or from the upper part of the thigh (Remak's sign).

Another useful test is that described independently by Mendel and Bechterew. It consists in striking the dorsum of the foot at about the junction of its middle and posterior thirds. In the normal, extension of the middle toes follows, whereas, when a lesion of the upper neurone segment is present, flexion of these follows. The significance of Schäfer's and Mendel's signs is exactly the same as that of Babinski's, namely, they demonstrate the existence of a lesion of the upper neurone system. It is usually said that they do not occur in functional disease, but I should not like to be dogmatic on this point. Both these signs usually occur only when Babinski's is also present, but occasionally they may occur in the absence of this, and then their value in diagnosis may be very great.

The first case has illustrated some of the points by means of which we are enabled to distinguish between true and pseudo-paraplegia. The second case we shall make use of to study the problem of the differential diagnosis between the different varieties of the former condition. In doing this it is expedient to bear in mind some method of grouping the various causes of true paraplegia, so that by systematically taking into consideration one group after another, one is sure not to overlook any of them. For this purpose, I would commend to your notice the following simple scheme, which we shall apply to the next case by working from below upwards. This is not as a rule the better order, but I am adhering to it in this instance for a special reason.

A.—TRUE PARAPLEGIA.

I. *Physical*.—Hysteria.

II. *Organic*.

A. *Disease of Brain*.

I. Bilateral lesion.

- (a) Cortex, general paralysis of the insane, meningitis, porencephaly, hemorrhage, thrombosis of the superior longitudinal sinus.
- (b) Pons, tumour, vascular lesion.

2. Multiple lesions, tumour, vascular lesion.

3. Large single lesion, causing pressure on opposite side.

B. Disease of Spinal Cord.

1. Diffuse system degeneration. amyotrophic lateral sclerosis, disseminate sclerosis, combined sclerosis, Friedreich's ataxia.
2. Local Affections.
 - (a) Intrinsic—Myelitis, thrombosis, tumour.
 - (b) Extrinsic—Pott's disease, tumour, trauma.

*B.—PSEUDO-PARAPLEGIA.**I. Disease of Anterior Horn Cells.*

- (a) Acute—Infantile paralysis.
- (b) Chronic—Progressive muscular atrophy.

II. Disease of Peripheral Nerves.—Multiple neuritis.*III. Disease of Muscles.*—Dystrophies.

The patient is a woman of twenty-two, in whom the symptoms date back three years. Two points in the onset are especially noteworthy, namely, that it was a gradual one, and that a feeling of numbness long preceded the loss of power. When I first saw her, five weeks ago, her lower limbs were in a state of complete contracture; the flexion was so great that the knees touched the abdomen and the heels were pressed against the buttocks. Neither her efforts nor ours could unbend them an inch. Sores were present on the feet, no doubt from friction and pressure. The muscles of the thighs and legs were, and as you see still are, greatly wasted. We have never been able to elicit any of the deep or superficial reflexes in the lower limbs. There has been considerable retention of urine, frequently making necessary the use of the catheter, but never any incontinence. Sensation was quite abolished up to the pelvis, and blunted above that up to the costal margin. Above the waist there are no abnormal physical signs.

The clinical picture, the outlines of which I have just sketched, is evidently a grave one, and yet Dr. McKenzie has been able, by applying continuous forced extension, to get the limbs into practically their normal position. Coincidentally with this, the patient has recovered considerable power over them, and you see that she can now voluntarily bend or straighten them, though in an uncertain and tremulous manner. With the help of special apparatus she can even walk a few steps. This striking improvement is but another perplexing element in an obscure case, and we must take up the question of diagnosis with great care, though in the time allowed me I can only indicate the main steps in the argument.

In spite of the facts that there is much wasting of muscles, and that the reflexes are all absent, it is quite easy to eliminate all the causes of pseudo-paraplegia, of which these facts would at first make us think. Let us briefly mention the causes in order. The dystrophies are evidently put out of question here, by the patient's age and sex, by the absence of any similar cases in the family, by the distribution of the muscular wasting, and above all by the pronounced sensory disturbances. Affections of the peripheral nerves never cause such widespread contractions or such profound sensory loss; there is further no tenderness over any nerve, nor has there been any pain. Acute affections of the anterior horn are not to be thought of, for the onset here was gradual. Chronic affections of the anterior horn are equally easy to exclude, for not only is progressive muscular atrophy rare in a girl of this age, but its onset is localised, and it is not accompanied by marked sensory loss.

It is unlikely that the condition is one of extrinsic paraplegia, i.e., due to pressure on the spinal cord, for the three cardinal signs of this affection, namely, root pain, unilateral onset, and precedence of motor over sensory symptoms, are all absent. An intrinsic paraplegia, due to a local lesion in the cord, is more difficult to exclude, and a diagnosis of it might readily, but erroneously, be made in this case. The following considerations, however, speak strongly against it. To produce such profound sensory changes, the lesion would have to be very severe, indeed practically complete, and it is difficult to conceive of such a lesion existing without ever causing incontinence of urine or faeces. Again, as the sensory loss extends up to the level of the sixth dorsal nerve, it is incongruous that there is no trace of weakness of the abdominal or back muscles, for extensive local lesions implicate the motor fibres to a greater extent than the sensory ones. It is hard also to picture the nature of any local lesion that could cause the symptoms present. Thrombosis and myelitis have either an acute or rapid onset, and not a very gradual one, as was here the case, while against the idea of a tumour speaks not only the absence of any tumour elsewhere in the body, in spite of the long duration, but also the marked improvement that has recently taken place.

Most of the diffuse degenerations of the spinal cord can be excluded here by the absence of other signs that accompany these conditions. For instance, with Friedreich's ataxia, there would be an early onset—before puberty—a hereditary history, the presence of nystagmus, optic atrophy, or choreiform tremor. Amyotrophic lateral sclerosis would have caused an increased

activity of the deep reflexes; against this diagnosis are further the points mentioned above in connection with progressive muscular atrophy. Disseminate sclerosis occurs particularly at this patient's age, and it is not rare for it to begin as a paraplegia. However after three years one would expect to find other evidences of the disease, such as an intention tremor, nystagmus, ocular palsy, optic atrophy or the characteristic staccato speech. One of these system degenerations of the cord, namely the subacute combined sclerosis, is more difficult to exclude, and in my opinion it is the only organic affection that seriously enters into consideration. The accompanying degeneration of the posterior columns would account for the absence of reflexes in the lower extremity, as well as for the sensory symptoms. Such extreme contractures as are present in this case are, however, rare in this disease, and the severity of the motor and sensory disturbances strangely contrast with the integrity of the sphincter action. This form of combined sclerosis is usually accompanied by severe anemia, which is not present with this patient, and the symptoms never improve so rapidly as they have here; indeed the prognosis is as a rule grave. Further, two characteristic features of this affection, pain and ataxy, are quite absent here.

Of the brain disease little need be said. A glance at the list of brain conditions that may cause paraplegia shews how easily they can be excluded. Porencephaly, meningitis, general paralysis of the insane, tumour of the brain, are all easily negatived by both the history and physical signs. The only vascular lesion that is at all likely to cause paraplegia without also affecting the upper limbs is thrombosis of the superior longitudinal sinus, an affection that is a not very rare complication of chlorosis. The slow onset and the presence of profound sensory disturbance are, however, two features that definitely exclude this diagnosis.

We have thus apparently eliminated with this patient every group of nervous affections that may cause paraplegia, and yet here remains the paraplegia. We have therefore to recall the fact that paraplegia may occur independently of any organic affection of the nervous system, and may be due to a psychical disorder. This is the diagnosis at which we have arrived in this case, namely, that the paraplegia is of a hysteric nature. This diagnosis was made not only on negative grounds, i.e., not only because the condition is inconsistent with any organic affection. There are also positive evidences indicating its hysteric nature. In the first place it is certain that the patient is a hysteric. In giving you the history of the case I omitted to mention that

she had suffered for years from what are certainly hysteric seizures. These consisted of irregular convulsive attacks, which frequently lasted for a couple of hours, and which were followed not by a deep sleep, as in epilepsy, but merely by an amnesia for the period. In the next place, all the symptoms I have described to you are not only consistent with, but are typical of, hysteria. I need only recall to you the advanced contractures and the retention of urine, both of which have been overcome by persuasive measures. Finally, some features of the paraplegia are quite distinctive of hysteria. I refer particularly to the sensory symptoms. The complete anæsthesia for all stimuli, and the amnesia for parts of the body, are very suggestive indeed of hysteria. Further, during the improvement that has lately taken place it has been possible to evoke sensations by active stimulation of the lower extremities, by strong tapplings, and in connection with this two features are especially significant. First, the strongest stimuli we can apply, namely, painful ones, are quite incapable of evoking any sensation, and we know that these are the very ones most frequently and most completely lost in hysteria. Secondly, every sensation that is evoked by tapping a point on a lower limb is accompanied by a simultaneous sensation, which the patient refers to the corresponding point on her upper limb. Thus, tapping the knee causes two sensations to be felt, one on the knee, the other in the olecranon of the same side. This is a rare symptom, the significance of which, interesting as it is, it would be out of place to discuss here, but I would point out to you that it is pathognomonic of hysteria.

You are thus once more reminded of how grave are even the physical conditions that may be produced by a physical malady, and I would further remark that the outlook in such a case as the present is similarly grave. Although the present symptoms may altogether disappear, yet they are only too likely to recur at some future date, or to be replaced by fresh, and perhaps even more distressing ones. Hysteria is an affection that is rarely cured unless Freud's psycho-analytic method of treatment² is resorted to.

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VICIOUS CIRCLES IN MEDICINE.*

BY J. T. FOTHERINGHAM, M.D., TORONTO.

Sir Clifford Allbutt has somewhere in his usual exquisite literary style referred to the part which the modern physician plays in the relief of disease, as that of the ancillary mouse in Aesop's Fable, indicating his belief that while Nature plays by far the greater part in the relief of sickness, the well-trained physician, the iatros polypeiros of Hippocrates, is called upon many times to nibble one string of the net that enmeshes the sick lion, and so set him free to complete his own work of healing. This is another way of saying that ill-health consists usually of a vicious circle, or of many such, which must be wisely broken in upon at the selected point, so that Nature, some of whose compensatory processes are at fault, may be set straight.

We may, perhaps, before defining Health define the term Vicious Circle. The logician by this term means *argumentum in circulo*, in which certain conclusions are drawn from certain premises and used again to prove the correctness of those premises, so that as in a circle there is no starting point. The term was many years ago transferred to medical nomenclature, and means a condition in which, while the cause produces the effect, the effect continues and reproduces the cause, so that both the proverbs are correct, "*Ablato effectu cessat causa*," and "*Ablata causa, cessat effectus*."

Before going into a prolonged discussion of these vicious circles it may be well to definitely state our views as to what Health means. In the first place, it is a purely relative term, because what is to one individual sound health might be, if suddenly transferred to the experience of another, a state of miserable ill-health. The chlorotic girl with 50% hemoglobin may, like a bird in his cage unaccustomed to liberty, feel quite well and cease taking her iron; the same blood state suddenly occurring in a healthy male would undoubtedly induce an acute sensation of ill-health.

Health is perhaps best defined as the normal balance of all the interacting body processes, for the maintenance of which a whole host of circles must exist. This means that, in addition to the absence of vicious circles, health depends upon a proper balance of physiological or normal circles, the interaction of

* Read at the Calgary meeting of the Alberta Medical Association, August, 1909.

various organs, as the right heart with the lungs and with the left heart; the heart with the liver and its associated digestive surfaces, the gastric and intestinal mucosae. Any one of these normal circles may become a vicious circle. From being physiological it may become pathological.

The study of a few of these many circles may help us to appreciate better the high art and skill of the true physician, especially in his capacity as a therapist, in which his first duty is to imitate Nature, to interfere with her processes only when forced to do so, and, as far as may be, always with the object of assisting Nature along her own lines where her own efforts seem not to be tending to the desired end. Therapeutics in this sense may perhaps be called a science rather than an art, though both these aspects are essential, just as anatomy is essential to both the surgeon and the physician from the point of view of science, and is equally essential, though in a totally different way, to the artist, if his painting or his statuary are to be true to Nature.

To illustrate, a few of the physiological circles which suggest themselves are as follows: The size of the pupil of the eye determines and is determined by the amount of light entering it; the growth of the brain, other things being equal, depends upon the intellectual activity of its possessor, which in turn is increased by the growth of the brain. While this might be hard to establish as applied to any single individual, it is abundantly proved by a comparison of the Caucasian and Negroid skulls, and of the inventive and intellectual performances of these two branches of the human family. One may refer, too, in the same connection, to the very interesting effect upon the female pelvis due to the requirements of child-bearing—the negro female pelvis standing half way between the round capacious pelvis of the Caucasian female and the narrow pelvis of the monkey.

Again, the normal balance of the blood as regards quality and quantity depends upon a regulating mechanism in health controlling haemogenesis and haemolysis, the original impulse being probably chemotactic in character. One need only refer to this to remind you of the disastrous results seen in pernicious anaemia when this normal circle is perverted into a vicious one.

A fourth example of a normal circle has recently been advanced by the physiologists, some of whom say that exophthalmic goitre and its symptoms are due to a disturbance of the balance between the thyroid and adrenal secretions.

Again, the action of the respiratory centre and the state of the blood are mutually dependent, the activity of the centre

being augmented if the carbon dioxide tension in the blood increases, and depressed as that tension falls. The rate of the heart and the blood pressure also are each determined by the other. With high tension the rate is slowed, while a fall of pressure increases the rate, the adjustment being made through the central nervous system. This is most interestingly seen in the high tension and slowed pulse which accompany increased intracranial pressure as in depressed fracture or subdural hemorrhage. Nature is seeking by the increase of pressure to maintain the nutrition of the compressed portion of the brain tissue, which, as is well known, like all other nervous tissue, is extremely sensitive to deprivation of its nutriment, the high tension being thus Nature's attempt to ward off the impending disaster.

Still another example showing how gradually a normal circle may be perverted and shade off into a vicious one is the arrest of intestinal movement and the abdominal rigidity by which Nature seeks to check the spread of peritoneal infection. The intestinal stagnation and putrefaction thus induced adds to the toxemia which is putting the life into jeopardy.

We may now perhaps, having at least partially cleared the ground and opened up the way, proceed to discuss vicious circles, and in this discussion I wish at the outset to disclaim any great originality, and to acknowledge my obligations to a series of papers on this subject published within the last few years in the *British Medical Journal* and the *Lancet* by Dr. J. B. Hurry, of Reading, England. He defines the term, vicious circle, as "A morbid condition in which cause and effect are so correlated that cause becomes effect and effect becomes cause."

We must exclude from our definition spurious circles in which there is no reciprocal action between cause and effect, such as congenital malformation of the heart, in which the arterial and venous systems communicate direct, or the short circuiting occasionally seen after a gastroenterostomy when the contents of the stomach on passing through the artificial opening instead of going on down the intestine, are carried back through the short loop into the stomach again.

As I have already said, the vicious circle is often one of Nature's good circles gone wrong, or a failure of one of Nature's attempts at compensation. The recognition of these vicious circles is frequently difficult. Practice in the detection of them is certainly a profitable exercise, training one's habits of observation and increasing one's clinical acumen.

Dr. James Mackenzie, formerly of Burnley, now of London,

one of the acutest of observers, the author of that well-known work on the "Diseases of the Heart," in a new volume which he sent me only this month, called "Symptoms and Their Interpretation," refers thus to the question:

"Medicine has not attained that place in science which ought of right to belong to her. Instead of leading the scientific development and giving guides and indications to the allied branches, she is too often content to languidly follow in their wake or to pursue some erratic course of her own. The observations made in her name are frequently made more to support some vague speculation or far-fetched theory than to realize the actual condition of the observed phenomena. The sister sciences, in place of seeking for assistance from medicine, look askance at the wild speculations put forth in the name of medical science and at the loose thinking and play of the imagination which many medical writers deem legitimate in dealing with the phenomena of disease. To emancipate medicine from this position of inferiority and to secure for it that status which it ought to possess, an effort must be made as far as possible to free it from the habiliments that have hampered it in the past, and if this appears an unattainable goal at present its writers may at least aim at greater precision in thought and in observation. Although this doctrine may seem the commonest platitude, and teachers and writers of text-books are unwearied in inculcating it, nevertheless precision in thinking and in observation are among the rarest qualities. The power of acute observation and precise thinking is so seldom acquired, because methods have become stereotyped, that many observers do not realize that they are fettered in the bonds of tradition. Even in the writings of those who claim to be exponents of exact observation and logical reasoning, loose thinking too often appears, even when the scientist imagines himself supreme. What are called observations are but a mixture of imperfect observation and unwarranted deduction."

We must, I think, admit that these somewhat scarifying observations are only in the main too true, and if I can by this exercise train myself and help any of my hearers to more accurate study and clinical observation I shall feel myself amply rewarded.

Dr. Hurry in the papers referred to classified his vicious circles by their etiology into Organic, Symptomatic, Infective, Chemical, Mechanical, Neurotic and Artificial. He also classified them by the names of organs involved (only partially, as he would himself admit), into those of the Circulation, including

the Blood, the Vessels and the Heart, the latter being again subdivided into those due to the myocardium, the endocardium, the pericardium, neuroses and those due to falling blood pressure.

His second great group in this class is vicious circles in the Digestive System, subdivided again into those of the mouth, the stomach, the intestines, and the rectum and anus. A third group is vicious circles of the Respiratory System.

Without pretending to exhaustively discuss this somewhat imposing list of vicious circles, an example or two of each kind may be profitably considered.

Organic circles are those arising between two organs so interdependent that difficulty with the first may cause difficulty with the second, which in turn upsets the first, and *vice versa*. An example familiar to everyone is the dilatation of the right heart due to obstruction to the circuit in the lungs by pneumonia, the dilatation being caused by the pneumonia, and in turn aggravating the pneumonia by permitting stagnation of blood in the lungs.

Mitchell Bruce vividly describes another vicious organic circle, as follows: "When the wall of the heart fails the liver affords it temporary relief by accommodating mechanically within it the blood that otherwise would be overburdening the cardiac chambers. The hepatic functions, and in their turn the stomach and bowels, which are dependent on the portal circulation, presently become deranged, and thereupon the heart is further weakened, and it may be, finally undone, by a set of conditions made for itself and for its own immediate temporary advantage. The heart has paid dear for the accommodation; the day of reckoning has come. Bad has led to worse. A vicious circle is established—the penalty attending the accommodating process and the vicarious action by which one organ assists another in distress."

One need scarcely point out how this vicious circle may spread and involve other circles, systemic as well as portal, including organs so remote as the kidneys and the brain, a good example of what I meant a few moments ago when describing health as the proper balance and interaction of all the various circles and processes in the body.

The next group of vicious circles, the symptomatic, includes a great number perhaps readily enough suggesting themselves to you as I speak: for instance, urticaria, by its severe itching, produces scratching, with a resulting increase of the urticaria; or intussusception is due to increased peristalsis, and itself causes increased peristalsis. Strangulated hernia causes vomiting, and

is increased by vomiting. Brain tumor may cause vomiting, which, by the straining, may cause hemorrhage into the tumor, increasing its size and hastening the final catastrophe. Obesity usually predisposes to indolent habits; result, increased obesity.

The third group, that of infective circles, is a most familiar one. The pin worm is reproduced and the circle maintained by the transference of its ova by the nails of the child host from the irritated perineum to the mouth; or in tuberculosis, fresh inoculations, as in the larynx or the opposite apex, are due to the sputa coughed up from the primary lesion.

A good example of a mechanical vicious circle is that seen in the ordinary abductor paralysis of the larynx in the horse, known as "heaves," in which over-exertion, by causing deep breathing, causes the sucking together in inspiration of the vocal cords; or in the occasional dyspnoea of some cases of simple goitre, in which the dyspnoea, started perhaps by some casual effort, causes the extraordinary muscles of respiration, especially the sterno-hyoid and the sterno-thyroid to overact and compress the goitre, thus increasing the difficulty and completing the circle, with sometimes fatal results. Or again, in paraphimosis, the preputial band, unless relieved, steadily increases the strangulation and oedema of the glans, each reacting viciously on the other.

A good example of the chemical vicious circle is seen when, in diabetes, the thirst causes abundant drinking. This causes dilution of the blood, and this polyuria, with consequent concentration of the blood and returning thirst and drinking. The knowledge of most of us of the chemical correlations of the healthy body is but slight, but enough is known of physiological chemistry to enable one to express the opinion that the next twenty years will show a great increase of our knowledge of this group of vicious circles.

As to neurotic circles, many, if not most of them, may be said to be functional, as in the case of neurasthenia, in which prolonged repose not only calls for further rest, but is damaging to and impairs ordinary ambition, so as to abolish all inclination for physical and mental exertion. The vicious circle may, and usually does, if the patient be a female, involve the mother, sister or other female relative. Oliver Wendell Holmes has said: "An hysterical girl is a vampire, who sucks the blood of healthy people about her." Weir Mitchell says, in his little treatise, "Fat and Blood," "Nothing is more sad and pitiful than these partnerships between the sick and selfish and the sound and overloving. By slow but sure degrees the healthy life is absorbed by the sick life in a manner more or less in-

jurious to both, until, sometimes too late for remedy, the growth of the evil is seen by others."

The neurotic vicious circles associated sometimes with the digestive, sometimes with the cardiac, and often with the sexual apparatus, show themselves very frequently in a correlation of local morbid conditions, a tender ovary, a loose kidney, a chronic irritation of the colon, and so on, with the constitutional condition of irritable weakness, in which the subconscience sensory stimuli from the sources indicated, which, in ordinary health would never reach the sensorium, are elevated to the realms of consciousness, and become harassing realities to the sufferer. The pain is felt severely because the nervous system is sensitive, and has itself the effect of weakening the nervous system still further. Indeed, often in the normal human being the loss of self-control and of mastery over one's emotions, which is due to the physical weakness of a fit of acute illness, adds greatly to our sensitiveness of pain and distress.

A few words about the last in the group classified by their etiology—artificial vicious circles. These will, I think, be best illustrated by examples of over-dosage or the injudicious use of drugs, such as alcohol, tobacco, opium or similar narcotics, or the use of belts or other supports, to the exclusion of Nature's muscular mechanisms, and so on. The drug habit is but too familiar to us all. The old proverb applies, "*Vires acquirit eundo.*"

Alcoholism induces chronic gastritis, morning vomiting, loss of appetite, exhaustion, depression, physical, mental and moral, and the sufferer, on rising from a perhaps unrestful bed, promptly goes back, as the old proverb has it, "for a hair of the dog that bit him."

Tea, especially infused long and consumed in large quantities, causes dyspepsia and constipation by its tannin, habituates the nervous system to stimulation by its active principle, and induces an irritable weakness and a desire and need for more, which we see perhaps even more strikingly in the devotee of morphine.

The physician who knows digitalis vaguely, merely as a "cardiac tonic" and diuretic," if he finds a patient to whom he has been giving the drug suffering from small, feeble, rapid pulse, circulatory failure and suppression of urine, would probably seek by increasing the dose of digitalis to relieve the symptoms which are probably due to his already injudicious use of the drug.

Hyoscine, valuable as it is in some acute manias, is sometimes so used as to cause the persistence of the mania, for instance, that of alcoholics.

Sodium salicylate, useful as it is in acute rheumatic fever, is not infrequently responsible for delirium, which is no part of an uncomplicated attack of rheumatic fever, but usually means a complication, such as hyperpyrexia, pericarditis, or meningitis, or too much salicylate. Reduce the sodium salicylate, delirium may and often will disappear.

Of our second mode of grouping, by names of organs involved, a few examples may be briefly mentioned. Of circulatory vicious circles, a very simple example is that of the association of chlorosis with gastric ulcer. The malnutrition of the chlorosis makes the gastric mucosa vulnerable; it bleeds, and so the anemia is suddenly increased. Everyone knows the un wisdom of seeking to immediately correct such an anemia by the use of iron, although the patient is most urgently in need of it, the irritation of the stomach by the iron being probably the procedure most likely to induce further vomiting and bleeding. The less dangerous simple dyspepsia of anemia is an exactly similar vicious circle, the result of the poor quality of the gastric juice elaborated by the peptic glands from the depraved blood with which they are supplied.

Myocardial change, whether induced by coronary disease or not, must mean reduced propulsive power, therefore, less well-filled coronaries, therefore progressive myocardial change.

Dr. Samuel West, of St. Bartholomew's Hospital, long ago pointed out that between the two sides of the heart a vicious circle may be established, because when the right side of the heart fails, perhaps from some pulmonary condition as bronchiectasis or emphysema, the engorgement of the right side overloads the coronary veins which open into the right auricle, from which, of course, arise impaired circulation and mal-nutrition of the whole heart muscle. Even more frequently seen are vicious circles associated with valvular lesions. So long as compensation is maintained, the tendency to the formation of these vicious circles is pretty well controlled, but with the rupture of compensation, as for instance in cases of aortic regurgitation, the period of repletion of the coronary arteries is reduced in length, so that impaired nutrition of the cardiac muscle follows, lessened working capacity, increased regurgitation, still less complete filling of the coronaries, and finally the catastrophe, sometimes with startling suddenness.

Still another quite evident vicious circle is seen, especially in malignant endocarditis, in which the bacterial growths and

erosions of the valves send off showers of infective emboli, spreading disaster, sometimes in the brain, sometimes in the spleen, the eye, the kidney, and other far-separated organs.

But for fear of wearying you I shall forbear, and briefly display in graphic form before I sit down a few of the more striking vicious circles to which I have been referring.

To conclude, what lessons may we draw for our own profit and that of our patients from this brief and insufficient discussion of the subject? I hope that I have succeeded in convincing you, as I have myself, of the very great importance of the subject. This importance, I may say, is two-sided. It bears directly on our evolution as physicians, and it bears very strongly upon the health and fortunes of our patients. The physician, if he be not yet the many-sided one of Hippocrates, may, and certainly will, improve his many-sidedness in proportion as he follows up the line I have suggested.

In what does clinical experience consist? I have been for many years accustomed to teach my classes that it does not consist only in the number of cases, say of pneumonia, which one sees, but in the care and industry with which one observes, so that, as I have many times said to them: "If I had pneumonia there are house physicians of my acquaintance who have seen and carefully studied perhaps ten cases of pneumonia, to whom I would rather entrust my fate than to some practising physicians of my acquaintance who may have seen a hundred," for the reason that the younger man has a more definite "composite photograph" of the disease, its natural history, and its usual course, as part of his mental and professional equipment, as the result of trouble taken in observation, than the other non-observant careless man has been able, or rather willing, to acquire from his hundred cases. Clinical experience, like genius, is in the main an infinite capacity for taking trouble.

Now, as to our patients, in prophylaxis, in diagnosis and in treatment, there is no doubt, I think, that by careful, painstaking and accurate observation and consideration of the natural history and course of disease, the physician may sometimes at least foresee and forestall the establishment of a vicious circle.

For instance, consider the use of digitalis for a threatening heart failure in pneumonia, not as a matter of routine, but because the right heart is showing early signs of being in difficulty. And here let me digress for a moment to warn you against routine, and against the man of one drug or of specifics. Pay no attention to the remarks of the man who says that, for instance, all pneumonia will do well only if treated

with digitalis. We have all seen papers and heard remarks of this sort. Therapeutics is in part a science, but in the main an art. Skill in treatment, and wisdom in intervention upon the processes of Nature, are mainly the result of experience, and are, therefore, an art rather than a science; and lest we should forget and become vain in our modern knowledge, let me quote you once more a very old proverb, "*Melius est praevenire quam praeveniri.*"

As to the advantage to the patient in the way, secondly, of diagnosis, it is a mere platitude to say that the detection of the diseased condition with sufficient accuracy to give it a name, is one thing, and usually comparatively easy; but that the Greek word "diagnosis" means "through and through knowledge" not of the disease but of the patient. What of the man who sees, correctly enough, that the patient has pneumonia, but fails to note that he has with it a leaking or obstructed mitral valve? How far could he be trusted in his prognosis and in his treatment? No diagnosis can be said to be completed till an exact, or at least as exact as possible, a recognition is had of all the interacting forces that tend to dissolution or to recovery.

For example, a tender ovary or a loose kidney may be the link in the bonds by which the patient is enmeshed as a neurasthenic, and so simple a thing as the wearing of a belt, or possibly, but very rarely, so great a thing as an ovariectomy, may be all that is needed to secure health.

Or, again, the headache and vomiting of an acute glaucoma. If a thorough diagnosis be not made, and the condition recognized as something else than a simple bilious attack, what shall we say of the diagnosis which ends in prompt destruction of the retina and lifelong blindness?

And thirdly, as to treatment, I need carry my argument no farther, having already given examples of what I mean under the head of artificial vicious circles, illustrated by mistakes in the use of digitalis, hyosine, and sodium salicylate. Many similar examples are doubtless suggesting themselves to you as I speak. Do not let vicious circles be established if foresight and skill can prevent them. Once again, it is better to anticipate than to be anticipated. Let us try always to follow the wise advice of Ovid, so often quoted, and still worth quoting again:

"Principiis obsta; sero medicina paratur
Cum mala per longas convaluere moras."

"Meet symptoms at their starting; too late the potion is prepared when vicious circles have grown strong through long delays."

REPORT OF OBSTETRICAL DEPARTMENT, ST. MICHAEL'S HOSPITAL, 1909.

BY DR. FREDERICK FENTON.

TORONTO, November 26th, 1909.

Mother Superior, St. Michael's Hospital, Toronto:

MADAM,—I have the honor to present the following report of the work done in the Department of Obstetrics during the twelve months ending September 30th of this year:

Patients (not yet confined) remaining in hospital Sept. 30th, 1908	3
Patients admitted during the year	242
Total	245
Patients discharged (not confined) during the year.....	15
Patients confined during the year	215
Patients (not yet confined) remaining in hospital Sept. 30th, 1909	15
Total	245

There were two twin births, making a total of 217 infants born.

Nine infants were born dead, and twenty died in the hospital.

There were three maternal deaths.

Of the patients confined, 154 were under the charge of the Obstetrical Staff, and the balance, 61, under various members of the Hospital Staff.

Of the patients confined, 154 were under the charge of the nine instances the sex was not recorded.

POSITIONS AND PRESENTATIONS.

Left occipito-anterior, 106; right occipito-anterior, 27; right occipito-posterior, 10; left occipito-posterior, 2; face, left mento-anterior, 1; hand, 1; breech, 6; foot, 1.

In those cases not attended by the members of the Obstetrical Staff (61), no record was made of position and presentation.

The following operative deliveries are recorded:

Forceps delivery, 47 times; rotation and forceps, 4 times; version, once, and Cæsarean section, 3 times.

Labor was induced once for pyelitis of pregnancy, and on one occasion a hydrocephalic head was aspirated. In both instances the infants were delivered alive, and both mothers recovered.

There were three cases of placenta prævia, in which all the mothers and two of the children recovered. In the case in which the child died, the pregnancy had only advanced to the fifth month, and the hemorrhages were very severe.

Two cases of eclampsia occurred, one antepartum, of which a detailed account will be given, and the other postpartum. The former died two weeks later, and the latter recovered.

Precipitate labor was recorded in four instances, in none of which was there any serious injury to mothers or infants.

There were two cases of postpartum hemorrhage. Both recovered. (It is interesting to note that in neither of these cases was any anæsthetic used.)

In ninety-six cases there was more or less injury to the maternal soft parts, as follows: Slight perineal tears, 67; moderate, 17; severe, 2; vaginal tears without perineal, 3; perineal and vaginal, 4. In four instances tears of the cervix were repaired; one severe, in a case of placenta prævia, one moderate, in a case of version, and two moderate, which were causing subinvolution.

There were four cases of mastitis, one of which resulted in abscess formation.

There were fifteen premature labors. Five of these infants were born dead; five died within a few hours, and five left the hospital well.

Nineteen mothers had elevation of temperature during the puerperium, due to the following causes: Gonorrhœa, with salpingitis, 2; mastitis, 3; cystitis, 1; retained membrane, 1; pyelitis, 1; constipation, 3; vaginal abscess (gonorrheal), 1; abdominal Cæsarean section, 1; sepsis (presumably avoidable), 6. Of the six presumably avoidable cases, one had fever for two days, one for three days, one for four days, two for five days, and one for seven days. All recovered, and the highest temperature recorded amongst them was 102.3 degrees. The total morbidity amounted therefore to 8.84%. Excluding cases in which gonorrhœa had been demonstrated prior to labor, cases of mastitis, cystitis and pyelitis, as well as those in which there was a transient temperature due evidently to the existence of constipation, and leaving only those cases which might properly be classed under the head of puerperal infection, the

morbidity rate drops to 3.72%. None of these patients were ever seriously ill, or suffered any permanent ill-effects as a result of the sepsis, nor was it necessary to transfer any to other wards on that account.

Of the 55 delivered by operative procedure, only two had any elevation of temperature.

Examinations of the urine showed that thirty-six patients suffered from albuminuria, seven from glycosuria, sixteen from oxaluria, and that three had casts in the urine without albumen.

Of the three Cæsarean sections done, two were for contracted pelvis, where former labors had resulted in dead children, and in both instances both mothers and children recovered.

The third was a vaginal section, done for eclampsia at about the thirty-fourth week of gestation. There had been five convulsions before admission to the hospital.

The baby was delivered alive, and did fairly well on artificial food for two weeks, when it died suddenly and unexpectedly in convulsions. No post-mortem examination was permitted.

The mother had no recurrence of convulsions, and regained consciousness in a few hours after the operation.

She remained well till the fourth day after, when she developed a pneumonia affecting the right lower lobe.

This attack terminated on the ninth day, thirteen after delivery, but two days later the upper lobe of the same lung became similarly involved, and she died on the sixteenth day after delivery.

The operation wound had completely healed, and involution had proceeded satisfactorily.

The causes of death of infants who died in hospital, after delivery, were as follows:

Hydrocephalus, 1; premature birth, 5; hemorrhage neonatorum, 2; birth injuries, 4; cord infection, 1; atelactasis, 1; parotid abscess, 1; artificial feeding, 4; pneumonia, 1.

The maternal deaths resulted from the following conditions:

Acute miliary tuberculosis, apparently originating from an old tubercular knee; pneumonia, following vaginal section for eclampsia; and mitral stenosis, from which condition the patient was more or less water-logged on admission some weeks before delivery.

In presenting this report, I take the opportunity of express-

ing my appreciation of the work of the Nurses and House Staff, to whom much of the credit for the very low morbidity rate must be given, and to whose faithful discharge of duty in the carrying out of instructions the satisfactory working of the department has been made possible.

To Drs. Crawford and Magwood I am deeply indebted for their hearty co-operation in the work of the department. It is to Dr. Magwood's untiring efforts in the indexing and filing of histories that this report of the year's work must be credited.

I wish to express my thanks for the ready and cheerful adoption of my suggestions regarding the administration of the department and the prompt furnishing of all instruments and appliances requisitioned for by me.

Faithfully yours,

FREDERICK FENTON.

75 Bloor Street East.

CANADIAN TRAINING SCHOOLS FOR NURSES.*

BY MISS CLARA GREENE,

Superintendent of the General Hospital, Belleville.

Trained nursing is the outcome of the reformation that has been gradually taking place in the practice of medicine. We know that there are preventive and curative agents outside of pills, powders and dosage; for, however good the treatment may be, to be of value it must be carried out fully and faithfully, and the ordinary hygiene of the sick room, the special rules for sick diet, must be observed by a person of intelligence, tact and unwearied vigilance, or a great deal of the work of the physician is lost.

As early as 1859 Florence Nightingale felt this, and handed over the fund that had been presented to her after her work in the Crimean War, to St. Thomas' Hospital, for the purpose of opening a school for the training of women in the care of the sick and the wounded. This school was called the Nightingale Institution. Unfortunately, the class and the number of women who entered it did not give promise of great success to the movement. They were women who saw before them the prospect of a respectable and comfortable living without undue expenditure of labor.

About 1868 an appeal was made to Miss Nightingale for assistance in reorganization, and a new order of things was instituted. After an almost wholesale weeding out of the old nurses, a better class of women were taken on as nurses, sisters and hospital superintendents. Two classes of probationers were given instruction—probationers and special probationers. The former class included those who received during their year of training from the Nightingale Fund payment in money and clothing to the value of about £16, or \$80. The latter paid £30, or \$150, for maintenance during the year of their training. This arrangement was made to give gentlewomen an opportunity to qualify themselves in the practice of hospital nursing. The training occupied one complete year, after which they were expected to continue their work for three years in connection with the hospital or some institution for the care of the sick.

Even this improved training did not supply the need nor give the comprehensive education required to elevate nursing to a

* Read before the Canadian Society of Superintendents of Training Schools for Nurses.

scientific art, although it was the only systematic one given in England at the time. In the *Lancet* of May 21st, 1872, we find the following:

“The importance of efficient and skilled nursing in the management of the sick is now so thoroughly understood and appreciated that we do not hesitate to acknowledge our satisfaction in meeting with the following paragraph in a notice circulated among the influential members of the profession in London and the aristocracy generally: ‘It is proposed to establish an institution in this country similar in its objects and constitution to the *Frauen Verein*, of Darmstadt, Germany. It will be intended chiefly for the education of ladies who are anxious to devote themselves to nursing as a profession.’ ”

This institution was called the National Nursing Association.

From these beginnings we find the spread of training schools for nurses to the other hospitals in London and England, across the Atlantic to the United States and to Canada. The year 1872 saw the opening of three training schools for nurses in the United States, namely, Bellevue, New Haven and the Massachusetts General, all three being the outcome of the conditions existing during and after the Civil War, and brought about by the earnest efforts of a few charitably disposed ladies, with the expenditure of much time, labor and money. The training received at these schools was to fit women to care for the sick poor.

In Canada, the town of St. Catharines was the first to follow the lead of Miss Nightingale. In the year 1873 plans were laid for the establishing of a training school for nurses in connection with the General and Marine Hospital, which had been founded by Dr. Theophilus Mack in 1865.

Dr. Mack was untiring in his efforts to promote the usefulness of the hospital, and to his remarkable enterprise is largely due the fact that a training school for nurses was established in St. Catharines long before the larger cities of the Dominion had taken this question up, and, indeed, at a time when nurse training schools were practically unknown on the continent, and only a few of the larger hospitals in Great Britain were known to be training nurses.

Dr. Mack and those connected with him, being anxious to introduce into Canada the system of training that was proving such a success in the old land, Miss Money, the matron of the hospital, was commissioned to go to London, England, for the purpose of bringing out two trained nurses and others willing to be taught, to the number of five or six.

In the winter of 1873 Miss Money sailed upon this mission.

She returned early in 1874, bringing with her three trained nurses from Guy's Hospital, London, and by June of the same year St. Catharines Training School for Nurses was established. It was afterwards given the name of the Mack Training School, in honor of its founder.

This, the oldest school in Canada, has been in existence continuously for thirty-five years, and is to-day one of the best known of the smaller training schools.

In the *Canada Lancet*, July 31st. 1877, we read as follows: "It is proposed to establish a training school for nurses in connection with the General Hospital, Toronto. Miss Goldie, Lady Superintendent of the Hospital, will assume the management. She has had considerable experience in the Franco-Prussian war and in British and Continental hospitals, and is, therefore, eminently qualified for such an undertaking.

It was not, however, until four years later, April, 1881, that the training school in connection with this hospital was really established. Up to this time the nurses were of the type found in all hospitals prior to the establishment of training schools. Educational advantages were not considered essential, and, indeed, most of these women were of the charwoman type, and were more anxious to keep up their own spirits by an occasional touching of their lips to the bottle than to concern themselves about the comfort and welfare of their patients. They slept in rooms off the wards, and took their meals in the basement.

In 1884 the training school was reorganized on a modern basis, under the management of Miss Snively (a Canadian, and a graduate of Bellevue Hospital, New York), the present Superintendent of the school, and from this time forth the spirit of improved nursing was abroad in our land.

The training school of the Toronto General Hospital is the largest in Canada at present, having one hundred and ten pupil nurses on the roll.

In the year 1876 two training schools were organized, one in connection with the Hospital for Sick Children, Toronto, and the other in connection with the General Hospital at Kingston.

In the years which followed the number of schools for nurses grew apace in connection with hospitals large and small. Of these we will only have time to mention a few of the more important.

The Lady Stanley Institute for Trained Nurses, Ottawa, or-

ganized in 1890, at the suggestion of Lady Stanley, wife of the Governor-General of Canada at that time, and named after her. This was an independent corporation, though the pupils received their practical training in the wards of the County of Carleton General Protestant Hospital and in the Ottawa Maternity Hospital.

In March of the year 1901 the Lady Stanley Institute was, by Act of Parliament, amalgamated with the County of Carleton General Protestant Hospital. The training school then became an integral department of the hospital, under the same management and control. The Act provides that it shall be maintained by the hospital, and continue to be known as the Lady Stanley Institute for Trained Nurses.

Another of the schools organized about this time was that in connection with St. Michael's Hospital, Toronto, opened in 1892 with five pupil nurses. This school has now 45 pupil nurses.

The oldest and best known school in British Columbia is that of the Royal Jubilee, in Victoria, founded in 1897 in commemoration of the Diamond Jubilee of our late Queen.

In Manitoba, the Winnipeg General has been doing good work for a number of years.

In Lower Canada, the honor of establishing the first training school (1890) belongs to the Montreal General Hospital. Many attempts made previous to this date had ended in failure. As early as 1870 a matron was selected and sent out to this hospital by Miss Nightingale, but after a few years of uphill work she returned to England. Whether the methods employed were at fault, or whether those in authority failed to grasp the situation, it is difficult to say; but the various attempts, as I have said before, were dismal failures. Like all other hospitals of that period, the Montreal General had its trials, the same faulty methods prevailing there as elsewhere. The nurses were hired by the month, and treated as servants, but neither housed nor fed, as well as the servants of to-day. To-day the Montreal General is the second largest school in the Dominion, having eighty-five pupil nurses.

Montreal also boasts of another large school, the Royal Victoria Hospital, organized in 1894, the pupil nurses on the roll this year numbering seventy-six.

When we remember that thirty-five years ago there was but one training school in Canada, and that to-day we have over one hundred well-organized schools, and over fifteen hundred pupil nurses in training, we feel that we have every reason to be proud of our position in the nursing world.

Selected Articles.

RENEWED RESEARCH ON THE SUBJECT OF ACUTE OVERSTRAINING OF THE HEART.*

BY PROFESSOR SCHOTT, M.D., NAUHEIM.

My Lord Duke, Ladies, and Gentlemen,—Before proceeding to read you my paper on acute overstraining of the heart, allow me to express my sincere thanks to the distinguished faculty of the West London Post-Graduate Medical College for the great honor they have conferred upon me by their kind invitation to deliver this address this evening.

While in the first half of the last century the valvular affections of the heart, with their train of symptoms, received the almost exclusive attention of the medical world, the chronic diseases of the cardiac muscle, and above all its functional disturbances, became later on the subject of much closer investigation. The organic changes in the heart muscle were in many cases not difficult to determine, either microscopically or more especially under the microscope, but it was otherwise in the case of those disturbances which we denote as purely functional. And it was here that—as must be familiar to everybody, especially in this country—the pioneer work of Peacock, and his observations on Cornish miners, acquainted us with the true character of cardiac overstraining. From that time forward this chapter of cardiac pathology has never ceased to command the sustained and watchful interest of the medical world. Furthermore, the great development of athletic sports which has taken place during the last two decades, especially here in England, has greatly increased the number of cases of cardiac overstraining which in consequence came under medical observation. These observations of Peacock were confirmed later on by the investigations of Myers, Clifford, Allbutt, Da Costa, Johann Seitz, Münzinger, and others. Nevertheless, knowledge of the true facts concerning overstrain of the heart could only win its way very slowly, for many declared themselves to be definitely opposed to the new teaching, whilst others spoke with very great caution and made known to the world their manifold doubts on the question, as, for instance, Von Schroetter, E. Seitz, and Strümpel. It was

* Delivered at the opening of the Winter Session of the West London Post-Graduates College, on October 11th, 1909.

the investigations of Leyden and Fraentzel which once more gave a fresh impetus to the researches on this subject.

I myself have reported in the year 1890 at the Ninth Congress of Internal Medicine in Vienna a series of experiments which I made in order to determine whether bodily overstraining could produce alterations in a healthy heart, and also to determine eventually the nature of such changes. For this purpose I selected young, robust individuals, from 14 to 32 years of age, whose previous state of health, as well as the physical examination to which I subjected them, showed them to be free from any anomaly of the heart whatever. I made two of them wrestle with one another, resisting or lifting each other, until a high degree of dyspnœa had been produced by the previously increased muscular straining. In a second series of experiments, in order to increase the dyspnœa and render the cardiac action still more difficult, I fitted a leather belt close under the costal arch of the subjects and made them wrestle while thus hampered. In both series of experiments I actually did find that, when such severe physical overstrain leads to dyspnœa, the heart undergoes a greater or lesser amount of dilatation. This I designated as acute cardiac dilatation, which, of course, is to be regarded as a temporarily abnormal, but not as a pathological, condition. This, as I mentioned at the time, is evidenced by the fact that in healthy, robust persons such an artificially produced cardiac dilatation can generally recede entirely within a very short time, often in one or two minutes. I must add that in my first experiment the cardiac dilatation was determined, not only by a colleague and with ordinary percussion of the absolute cardiac dulness, but also by myself, and according to the method of my brother, August Schott, consisting in the percussion of the total heart limits with lateral limitation. The experiments I made with this method on animals, as well as the investigations conducted by me later on in the Berlin Maison de Santé on the human cadaver, have shown the possibility of determining the anatomical limits of the heart by means of this kind of percussion.

When, subsequently, the heart and its movements were made evident to the eye by means of the Roentgen rays, I found all the observations I had made by percussion fully confirmed, not only by the determination of the heart limits on the barium platino-cyanide screen, but by Roentgen photographs as well. It is especially these that show the expansion of the left ventricle, and notably with a depressed diaphragm. In order to find the true measures I rendered the nipples visible by means of small

pieces of thin sheet lead, while by fixing the body of the subject under examination with straps around the head and shoulders, also by very exact drawings of the outlines of the feet on the floor, I had taken care to place the man always accurately in the same position relative to the apparatus, before wrestling and after. I had marked the nipples exactly by making dots on gelatine strips, and using these as reference marks, I could verify their being again in the same place at the second examination. Naturally, only such experiments were regarded as conclusive in which all these precautions were rigidly adhered to. It was also the purpose of the above-described experiments to show that by a succession of bodily over-exertions the clinical picture of chronic cardiac overstraining may be developed. For, as I mentioned at the time, chronic overstraining of the heart is to be regarded as the result of a repetition of excessive muscular efforts. In order to illustrate this point, I also added to my article the description of a few cases, and I found my views to coincide with the observations of Peacock, Clifford Allbutt, Fraentzel, Leyden, and several others.

Not only my experimental researches, but also my statements concerning especially such cardiac anomalies as follow the indulgence in excessive athletic sports, soon found confirmation in the works of Mendelsohn, and more particularly in the enlargements of the heart found in bicyclists by Albu and in ski runners by Henschen. Indeed, it seemed for a while as if chronic cardiac overstraining, solely produced by the cumulative effect of repeated and abnormally strong muscular efforts, was to be incorporated as a picture *sui generis* of cardiac pathology. This, however, did not last long. The former objection was heard again, that no heart can undergo permanent dilatation or hypertrophy through severe muscular overstrain unless previously altered, either in structure or in function. In this connection doubts were also entertained whether, in my experimental investigations on acute overstraining of the heart, the subjects of the experiments had been entirely normal. These doubts were especially accentuated by the orthodiagraphic examinations of Moritz, Aug. Hoffmann, and de la Camp. Not only do these experimenters claim to have found in the course of their investigations no cardiac changes at all, or at best very insignificant ones, but they even state that they observed cases where a diminution in size of the heart had actually occurred. About the same time, as we shall see further on, others confirmed, on the strength of their own researches, the occurrence of acute cardiac dilatation following acute overstrain in previously healthy indi-

viduals. Owing to material causes it was only in the year past that I was able to undertake further experiments on the subject which interests us here, and it is upon these, as well as upon other correlated experiences gained, that I wish to report here as briefly as possible. The first question to be considered is whether it is possible for a healthy heart muscle to hypertrophy from an excess of work.

If this question be answered in the affirmative, the question would also be answered whether an excess of work will cause a heart muscle to dilate, since nowadays there is hardly a divergence of opinion regarding the theory that dilatation is the primary, hypertrophy the secondary lesion. The old view of Fraentzel to the contrary may now be considered as controverted, while that of Thurn, Jürgensen, J. Bauer, and others is, with few exceptions, generally considered to be correct. It lies in the very nature of the case—and my brother was the first to call attention to the fact—that in such conditions we have only to deal with an accumulation of blood in the cardiac cavities—in other words, with a passive, congestive dilatation, as opposed to a dilatation by compensation. And now the fine experiments of Külbs on young dogs working a long time on the endless inclined plane have revealed that cardiac hypertrophy due to work does occur, without arterio-sclerosis, without kidney affections, even without increase in size of other parts of the muscular system. Külbs communicates the results of the post-mortem examination of the hearts of such dogs as follows: “Through physical work we can succeed in bringing about, in young dogs of the same litter, of the same sex, and approximately of the same weight, a fairly considerable increase of weight of the heart, both absolute and relative. The proportion of heart to bodily weight changes in this sense, that the working dog acquires a cardiac weight approaching that of the roe-deer, whereas the dog kept for verification and comparison of results showed the proportional weights to be those of the ox.”

It is thus physiologically established that simple performance of labor can lead to hypertrophy of the heart. But in men also it has been proved beyond a doubt that there is such a thing as pure, simple, cardiac hypertrophy. The exaggerated pursuit of athletic sport, which during the last 20 years has been constantly on the increase, has confirmed all the observations reported in my first publication, and one may find a large number of communications concerning cases where it was simply the physical overstraining due to excessive indulgence in athletic sports that impaired the hitherto healthy heart and led to chronic

cardiac overstrain, even in youths who had not suffered from previous maladies nor indulged in the inordinate use of alcohol, tobacco, coffee or tea. This is shown in numerous examples, which can be found in the extensive literature we already have on this subject, in very exact clinical histories as well as in the increased size of the heart found by means of the most diverse methods of percussion, also with the Roentgen rays, including the orthodiagraphic process. I need only here make a passing reference to the fact that sudden strong emotion, fright, or shock, are liable to produce very injurious effects on the heart, and medical men have ample opportunity of observing how prolonged anxiety or mental overstrain often impair the muscles and nerves of the heart. Von Frey, in his physiological work, very correctly points out that one finds dilatation with cardiac hypertrophy as the result of continued physical overstrain in persons whose hearts had not been subjected to any other noxious influences. And it is just exactly to this fact that I should like to call especial attention. All the former allegations regarding chronic cardiac overstrain having thus been confirmed, the only question requiring further consideration is, whether severe bodily overstrain is capable of exercising a direct effect upon the heart—in other words, whether abnormally severe muscular strain can bring about acute cardiac dilatation.

First of all, I should here like to meet the objection that my cases were persons whose hearts were abnormal, debilitated, or suffering from functional alterations. I experimented on 14 robust youths and young men, from 14 to 34 years of age, and with many of them I frequently repeated the experiments. I have kept most of them under supervision for many years, and to the present day their hearts have remained healthy without exception. As before mentioned, Mendelsohn, Albu, Henschen and many others have recently confirmed the facts which I had established by percussion. Once more I must premise that the results I had obtained with percussion were corroborated by my radiograms in 1897. Not only did I find a cardiac dilatation, but also a change of form of the heart, which was oval *before* the experiments, whereas *after* the wrestling the dilated heart had acquired a more circular form, this with the diaphragm forced downwards. The left cardiac half, which did not reach the nipple line before, extended beyond it *after* the overstrain. The change of form as such is a fact. There might at most be a difference in the elongation of the transverse diameter due to shadow projection, but this cannot be of consequence, since by proper selection of the time of exposure, the person under exam-

ination being in the same position, the heart lies close to the anterior thoracic wall, so that really only the thickness of the chest wall would have to be considered. And now the question arose whether, and to what extent, orthodiagraphic examinations give us better results.

It is not to be doubted that the discovery of orthodiagraphy by Moritz means a progress in the examination and observation of the interior of the body, this being especially the case where it is a question of determining the size of organs at rest or of foreign bodies within the organism. But it is a different matter when it comes to the determination of the size of organs in motion, of which one wishes to make comparative observations at different times. Not only does this apply to the heart but to other organs as well, such, for instance, as the stomach or the intestines while in motion, etc. For we should not forget that every orthodiagram we obtain is the orthogonal, therefore the vertical projection of the greatest extension in one plane. This plane is invariably the same in the resting immovable body, and therefore in this way we always obtain the same exact size of this body. It is quite different, however, with organs whose position changes more or less, like the beating heart. And we shall see that it is exactly these movements of the heart that have to be considered in our experiments. In his extensive work on the subject, Guttman has already pointed out that with orthodiagraphy rotation of the body or changed position of the individual could, in repeated delineations or drawings of the cardiac boundaries in different planes, lead to differences of from 1 to 2 centimetres and more. Excepting a paper read by Hoffmann in a former congress, I nowhere find any indication that in the experiments made on men or animals the same attitude and position had actually been maintained during the orthodiagraphic examinations made at different times. This repeated use of the same canvas frame does not of itself offer any guarantee of an identity of position. Attempts have been made of late to obtain photographs of the heart with the shortest possible exposure, even in a fraction of a second, and also with the kinematograph. Apart from the fact that the resulting pictures are often wanting in clearness, we never know positively in which phase of the heart cycle such photographs were made.

Quite recently, in the course of my work at Nauheim, the two following cases, amongst others, have come under my notice, which exactly illustrate my theme. The first case is that of a medical colleague, aged 38 years, whose roentgenogram had been taken by medical men experienced in taking orthodiagrams, and

these skiagrams had shown an enlarged heart. The dilated stomach had displaced the heart outwards and upwards. As soon as normal conditions of the digestion were restored, the size of the heart was found by percussion to be normal, and there remained, without any other abnormality whatsoever, only a simple neurosis of the heart, which simple treatment by means of baths, exercises with resistance and massage, speedily improved. The second case is that of a Russian lady, aged 44 years, who has for several years had myocarditis on a basis of diabetes, with the heart dilated to the right and to the left. Both the mitral and aortic valves had systolic murmurs. In addition, there were pronounced symptoms of angina pectoris; yet in spite of all this the orthodiagram taken in Berlin, as also the electrocardiogram showed absolutely normal conditions.

* * * * *

I have already on former occasions called attention to the fact that in order to avoid errors it was necessary to resort to the use of exact marks on the persons to be examined, and in certain cases to fixations that do not interfere with the respiration. It is exactly this which is shown in the heart silhouettes in de la Camp's work, and which were made according to the rules laid down by Moritz. Not only does, as de la Camp states, a changed location of the diaphragm and increased thoracic circumference after wrestling take place, nay, the subject under examination, after the experiment, has actually taken an entirely different position relative to the apparatus. This is clearly evident from the fact that the position of both nipples, relative to a hypothetical horizontal plane, is different before and after the wrestling, this difference allowing a fourfold decrease in size of the heart silhouette amounting to $1\frac{1}{2}$ centimetres. In other words, the second results were obtained in an entirely different plane from the first ones, and therefore, even for this reason, they are not to be considered as conclusive. The drawings published by Aug. Hoffmann cannot be accurately judged of, since neither the right nipple nor the location of the diaphragm is depicted in them. After all that has been said, it is hardly necessary to maintain that, in view of the possibilities of such great sources of error, we are still far from being able to determine the superficies of the heart within one single square centimetre, or its contents in a quarter, half, or in a whole cubic centimetre. But, as we shall see further on, the possibility of other sources of error will also have to be considered.

A number of further observations have been reported meanwhile by other authors, and these are likely to throw more light on the question of overstraining of the heart. According to the

orthodiagraphic examinations by the three investigators mentioned, it appeared as if great interference with the cardiac functions, changes which, in his experiments on dogs, de la Camp produced artificially in the cardiac valves as well as in the heart's muscular apparatus, had no immediate deleterious effect. And yet the observation of such changes in men should already lead to misgivings, for great dilatation follows acute valvular inflammation. To give a few examples. Beck, in his work, "Touring and the Heart," reports on 31 young men, in 28 of whom he had occasion to observe the immediate effect of mountain-climbing. We are, above all, interested in his statement that there had been no previous illnesses, and that mountain-climbing, which simply produced palpitation and shortness of breath, was followed not only by cardiac symptoms but also immediate dilatation, which he was able to demonstrate by percussion, in one case even by radioecopy. He saw, just as I did, such dilatations disappear in a very short time, often after a few minutes, and he shares my opinion that it is only a matter of over-accumulation of blood within the heart cavities. Beck reports other cases in which the dilatation persisted for a longer time, though in the healthy heart never longer than until the following day. But he also saw cases where, solely through frequently repeated mountain-climbing, in persons that otherwise had always enjoyed perfect health, the picture of myocarditis as well as that of mitral insufficiency developed itself. Staehelin, in his observations on Swiss recruits, also pointed out that mountain-climbing may lead to acute dilatation of the heart in previously healthy young men, while Düms shows how, simply on account of the severer strain to which soldiers are subjected nowadays, the number of cardiac affections is on the increase in the armies of the different countries. Beyer attributes this evil to the ever-increasing indulgence in the sport of bicycling.

Two years ago Baldes, Heichelheim, and Metzger reported the observations they had made on a number of young men, otherwise in excellent health, after a march of 100 kilometres (60 miles) in one day. In a relatively large percentage of the examinations, by means of percussion of the absolute heart limits, they found dilatation. It is especially to this work that I shall have occasion to revert again. The number of observations on the influence of bicycling on the heart is especially large, and the deleterious effect of this sport is confirmed by nearly all of them. This is particularly evidenced in racing, where heart troubles have been observed in relatively large numbers, also in cases where no other injurious factor was present. But in oppo-

sition to these observations we again have others, in which, even after very strenuous physical labor, no enlargement of the heart could be demonstrated, whether by percussion or by radioscopy. I only refer here, among others, to the investigations of Pfeiffer, published a few months ago, which he conducted on men, partly after protracted marches, partly after bicycling tours. In this category also belong the observations of Schieffer, to which I shall shortly revert. But the objections are by no means exhausted herewith. Even diminution in size of the heart after overstrain was found by means of orthodiagraphic examinations, such, moreover, as could not possibly be attributed to changes of position of the diaphragm—for instance, the examination made on swimmers by Kienböck, Selig, and Beck, and which led to the risky theory that the heart was relieved by the increasing flow of blood to the abdomen.

This conflict of opinion grows in importance if we consider the following facts: Dr. Baldes, Dr. Heichelheim, and Dr. Metzger kindly allowed me to avail myself here of the results of their unpublished experiments. These gentlemen last year determined the heart limits on healthy persons, orthodiagraphically, before and again after a march of 100 kilometres in one day. Moreover, these orthodiagrams were made with the diaphragm in the same position, partly by an expert official of the United Electrotechnical Institute of Frankfort o/M., Aschaffenburg, and partly by Dr. Baldes, who for two years almost daily made radiograms with Rieder in Munich. And now, instead of the enlargement of the heart formerly made apparent by percussion, they found a reduction in size. The copies of their orthodiagrams, which you see here, show very changing pictures. Sometimes we notice an enlargement of the right cardiac half with a reduction in size of the left half, then again the reverse is the case. But most striking above all is the great difference of form in the heart before and after the march. Particularly instructive is the case of a man who had made a very quick run of several hundred metres and had been orthodiagraphed while laboring with dyspnoea. The enlargement of the right half of the heart amounts here to 1 centimetre. On the other hand, the left half not only shows you a transverse diameter reduced by 3 centimetres, but the totally changed and flattened form makes it evident that the orthodiagram of this heart was taken in an entirely different plane after the run than before. The difference in position of the nipples, relative to each other, in the pictures taken before and after the march, argues in favor of this. Like those of Hoffmann, all these

orthodiagrams were made while the person under examination was in the erect position.

Last year a paper was published by Dietlen and Moritz, according to which they also found smaller hearts after bicycling. This paper exactly proves that it is by no means sufficient to register the results of orthodiagraphic examinations; also that orthodiagraphy of the quickly beating heart is still far removed from constituting an unobjectionable method for the determination of its size. Disregarding the fact that in these examinations by Dietlen and Moritz, it is not conclusively proved that the cardiac diameter obtained before and after bicycling represent identical cardiac planes, the cases described do not at all come under the head of genuine acute overstraining of the heart such as I produced in my experiments. As evidenced by the communications themselves of both-named authors, their subjects of experiments did not have any albuminuria or apparent palpitation, as found by other authors, neither did any dyspnoea develop itself during the entire trip. Judging from this, there may have been a straining involving a quicker pulse, also great fatigue, but a real overstrain was out of the question. And yet this is of capital importance.

Schieffer, who works in Moritz's clinic, did not, with orthodiagraphy, find any change in the heart whatever immediately after bicycling. Regarding the degree to which the straining was carried, whether or not to the extent of dyspnoea, he fails to impart any information. So that here also there is no agreement between the facts as found and the orthodiagraphic examinations already mentioned. Yet this ought to be the case, were it not that, so far as the beating heart is concerned, orthodiagraphy shares with other methods of examination the disadvantage of inherent sources of error.

Last autumn, and before I had any knowledge of the investigations above mentioned, I began to verify orthodiagraphically the results of my former experiments on acute overstraining of the heart. Again I had the wrestling and resistance exercises performed by men in absolute health, of unobjectionable health record, whose hearts exhibited normal limits and normal functions. The dispositions were exactly the same as in my former investigations. Measurements and drawings were taken only after excessive dyspnoea, profuse perspiration, palpitation, etc., had manifested themselves. Examinations of the blood pressure and sphygmographic drawings were dispensed with, their results being sufficiently known. The radiograms were obtained in St. Mary's Hospital in Frankfort o/M., partly by the director of

the hospital's Roentgen cabinet, Sanitätsrat Dr. Schmidt, partly by Mr. Dessauer, director of the United Electrotechnical Institute of Frankfort o/M., Aschaffenburg. They were made with Dessauer's trochoscope-orthodiagraph, it being claimed that this apparatus furnishes the most reliable results.

And now, before closing, I should like in a few words to revert to the question as to what might be the causes that led the several experimenters to such different results regarding the dimensions of the heart in cases of acute overstraining. First of all, we have to consider the circumstance that the determination of the cardiac dimensions may have been made under very different conditions. One investigator, for instance, may have examined during the period of pulmonary inflation; another one, perhaps, after the heart's dilatation had already diminished; while a third one may have determined the maximum cardiac extension while the heart muscle was in the state of greatest relaxation. Of course, it is evident that anyone who did not take part cannot render a reliable verdict on the correctness of the several results of percussion. True, the observations, as well as the nature of the experiments themselves, often differ so much that it is difficult to compare them with each other. To illustrate: Zuntz and Schumberg examined soldiers who had climbed high mountains, laden with accoutrements, until difficulty of breathing ensued, and found, while simultaneously testing the inferior pulmonary limits, dilatations in the transverse cardiac diameter amounting to 2 to 3 centimetres, which results Staehelin confirmed. How different the result in Altschul's cases, of which he himself was the first subject of experiment. Namely, after he had bicycled a considerable time on a bad road against a strong head wind I noted—and so did he—marked cardiac dilatation. On the other hand, he himself, a trained tourist, hardly found any cardiac changes at all in himself or in other trained tourists after a long stretch of mountain-climbing. To be sure, they were also not troubled with any particular difficulty of breathing. Again, we have the very opposite in the results arrived at by Beck, the men he experimented upon having scaled steep mountains until dyspnoea set in. And just compare Pfeiffer's results of his experiments on the effects of protracted marches with those of Baldes, Heichelheim, and Metzger, also those obtained on bicyclists by Pfeiffer with those of Albu.

The cause of the divergence between the experimental results can be traced without any great difficulty, for according to the physiological researches of later years the heart is constructed in

such a manner as to represent the most perfect motor with which we are so far acquainted, so that it is capable of answering to the smallest stimulus with a maximum development of power. Moreover, it possesses the faculty to adapt itself to changed demands. Thus, for instance, the dog's heart is capable of taking in six times its normal quantity of blood, and yet the left ventricle succeeds in overcoming this amount and contracting again completely. Certainly the heart's work increases enormously in overcoming such obstacles, and the increased intra-cardiac pressure must also be taken into account. But it is a well-known physiological fact that the dog, as far as the heart is concerned, can be subjected without detriment to considerably greater and longer hardships than the human organism, although fortunately the latter also possesses in its cardiac muscular apparatus and in its vascular system all kinds of temporary compensatory arrangements. And to these compensatory powers it is due, as I particularly stated in my first report, that the limits of over-expansion of the healthy heart may lie far apart in the muscularly strong individual. At the same time we see, nevertheless, that the qualities of the heart as a muscle manifest themselves, and to these also belong laxity and expansion as a consequence of excessive strains.

My Lord Duke, Ladies, and Gentlemen, I am firmly convinced that every physician, especially here in England, who has the opportunity to observe a considerable number of cases of heart affections will easily find confirmation of the fact that in individuals previously normal, and solely through the most different forms of overstraining, the heart may be brought first to acute dilatation, and finally through its repetition to permanent dilatation, with all its consequent phenomena.—*Lancet*.

THE INFLUENCE OF ALCOHOL ON IMMUNITY.*

BY PROF. TAAV. LÄTTINEN, M.D.,

Professor of Hygiene, Director of the Hygienic Institute of the University,
Member of the Finnish Academy of Science.

Modern researches have done much to explain the extent and nature of the protective powers by which the organism endeavors to defend itself against the attacks of all kinds of injurious agencies, and especially against invasion by the germs of infective diseases. It is now a well-established fact that alcohol weakens the normal resisting power of the body against the above-named disease-producing influences. In the hope of contributing something to the explanation of the way in which alcohol weakens the organism, I have made a number of experiments bearing upon the question of the influence of alcohol on immunity.

Early in the present century careful experiments went to show that alcohol certainly had some influence upon immunity. Two Americans, Abbott and Bergey, were the first to discover that this agent produces a diminution of the hæmolytic complement in the blood-serum of certain animals which were tested. They showed also that the formation of specific hæmolytic receptors (immune bodies) may be retarded by the action of alcohol. C. Fraenkel, however, asserts that both large and small quantities of alcohol exercise a definite stimulant action upon the formation of the immunising bodies.

R. Trommsdorff has described a retarding influence exerted by alcohol upon the formation of agglutinins in guinea-pigs. Rubin speaks of the negative action of alcohol upon phagocytosis in the case of staphylococcus, streptococcus, and pneumococcus, E. Stewart has noted the effects of alcohol upon the opsonic index for tubercle bacilli and also streptococci.

Almost similar results have been obtained by P. Th. Müller, Friedberger, and others in regard to the influence of alcohol on the protective qualities of the blood generally.

I stated in a paper read at the last International Congress on Alcohol, held in Stockholm in 1907, that alcohol, even in small quantities, causes a diminution of resistance of red blood corpuscles against a heterogeneous serum. I also then stated that I had begun a series of further investigations relating to

* Abstract of the Third Norman Kerr Memorial Lecture, delivered in connection with the Twelfth International Congress on Alcoholism at the Victoria and Albert Museum, South Kensington, London, Tue day, July 20th, 1909.

the question as it concerned the human body. The result of these researches up to the present time I now present in this Norman Kerr Memorial Lecture. The persons experimented upon numbered 223, beginning with myself. They were of different classes and ages. There were medical professors and other physicians, university Fellows, students of both sexes, hospital nurses, school teachers of both sexes, waiters, and other men and women of the working class. My studies have been directed to an investigation of the following points:—

1. I sought to ascertain whether the resistance of human red blood corpuscles against a heterogeneous normal serum or an immune serum can be diminished by the use of alcohol.

2. I have studied the action of alcohol in drinking and abstaining persons on the hæmolytic power of blood-serum over heterogeneous red blood corpuscles (rabbits). I have studied not only the hæmolytic power of the human blood-serum, but also its power of precipitation in the presence of rabbit-serum, with a view to ascertain if the reaction between a known dilution of rabbit-serum and a certain dilution of serum of alcohol-users and non-drinking persons is different or not, and if the reaction is more apparent with the former or with the latter.

3. The resisting power of serum obtained both from alcohol-drinking and from non-drinking persons was further tested by human blood, with the object of discovering whether any difference in reaction existed between the same immune serum and the two kinds of human sera above-mentioned.

4. I have studied the problem as to whether the hæmolytic complement in the blood-serum of alcohol-drinking and non-drinking persons is altered in any way by alcohol.

5. The bactericidal power of blood-serum from both alcohol-drinking and non-drinking persons was determined by some experiments.

The above experiments have given the following results:—

1. The normal resistance of human red blood corpuscles appears to be somewhat diminished against a heterogeneous normal serum or an immune serum by the consumption of alcohol, provided that tolerably large equal, or nearly equal, numbers of drinkers and abstainers of both sexes be examined, and the average of resistance be taken on both sides, this last-named precaution being necessary because the resistance of red blood corpuscles from different human beings varies largely. The difference is often greater when using weaker dilutions than when using stronger dilutions of lysin.

2. These experiments have shown the normal hæmolytic power of human blood-serum to be less in the case of alcohol-drinkers than in that of abstainers.

3. The precipitating reaction between a solution of 1 per cent. human blood-serum and different dilutions of immune serum (obtained by immunising the animals with blood-serum) was greater in the case of drinkers than in that of abstainers.

4. The complement action of human blood-serum, according to these experiments, was greater in the stronger dilutions (0.4 to 0.04) and less in the weaker dilutions (0.2 to 0.0004) in the case of drinkers than in that of abstainers; it was not, however, much affected.

5. These experiments have also shown that the bactericidal power of blood-serum against typhoid bacteria was less in the case of drinkers than in that of abstainers.

It seems clear, therefore, that alcohol, even in comparatively small doses, exercises a prejudicial effect on the protective mechanism of the human body.—*Medical Press and Circular*.

THE TREATMENT OF THE STOKES-ADAMS SYNDROME.*

BY REYNOLD WEBB WILCOX, M.D., LL.D.,

Professor of Medicine at the New York Post-Graduate Medical School and Hospital; Physician to St. Mark's Hospital, New York City.

The title of this paper may be misleading in that there is, strictly speaking, no treatment of a syndrome, but rather, of the underlying lesions of which the syndrome is the expression, and of the patient presenting these symptoms.

Definition.—The syndrome consists of (1) bradycardia, (2) cerebral attacks and (3) pulsation of cervical veins in excess of pulse rate (Stokes, 1846; Adams, 1827).

Pathology.—In a few cases so-called uræmia may be present. The symptoms suggest vascular disease of the cerebrum analogous to intermittent claudication (Huchard, also Gibson and Jaquet, 1904) or disease of the medulla (Charcot). It may be the result of various infections, intoxications, or, possibly, of prolonged use of digitalis.

Pathological anatomy.—Stokes' original opinion was that there was always (1) organic disease of the heart muscle. Some

* Read before the American Therapeutic Society.

instances were inexplicable after careful *post-mortem* examinations, and so remained until the suggestion of Gaskell's bridge (1883) and the discovery of the column (bundle) of His (1893) and the work of Erlanger (1905, also Humblet and Hering) who demonstrated the results of interference with it. To (1) should be added (2) localized disease of the column of His which may be sclerotic change in the endocardium, gumma, cartilaginous tumors, fatty infiltrations, with atrophy, or endarteritis in its artery, and (3) dromotropic inhibition of pneumogastric resulting from various lesions.

Symptoms.—To those cited in the definition of the syndrome others must be added:

1. Cardiac; precordial oppression, pallor, *anginal pain, sweating, syncope.

2. Cerebral; consciousness suddenly and completely lost, vertigo, epileptiform convulsions often preceded by an aura (olfactory gustatory, auditory or tactile), apoplecticiform attacks not followed by paralysis during or after them.

3. Respiratory; stertorous breathing, rarely apnoea, sometimes Cheyne-Stokes breathing. Lassitude after the attack is pronounced.

Signs.—Palpation of the cervical veins will show a difference between their pulse-rate and that of the radial artery. The stethoscope will determine auricular systoles in greater frequency than the ventricular, and, finally, the fluoroscope will give visible confirmatory evidence.

Diagnosis.—Strictly speaking, the Stokes-Adams syndrome should not include those instances of bradycardia due to infections or intoxications. If these can be excluded and arteriosclerosis, especially of the coronaries, is believed to exist, the diagnosis should be clear.

Prognosis.—This is uncertain, many die in the attack. Others recover and may live for years. If a syphilitic history is obtainable, the outlook is much more favorable.

Treatment.—(1) Prophylactic; avoidance of fatiguing exercise, emotional excitement, ingestion of copious and indigestible food, all of which have been assigned as valid causes. (2) Mechanical; if cerebral symptoms are associated, the body should be inverted, since, in some instances, bulbar anemia may cause heart block. (3) Medicinal; this must be based upon Erlanger's observations, which demonstrate that, in complete heart block, stimulation of the vagus has no effect, but when the accelerator is stimulated, the rate of both auricular and ventricular systole is increased. This rate is not affected by variations of general blood pressure, by asphyxia or interference with the ordinary

circulation. This would seem to exclude the use of the glyceryl nitrate group, which is not successful, and the digitalis group, which would likely do harm. Of the remedies which increase the rate of cardiac beat, those mostly studied as to their effect on the ventricle, are atropine (hyoseyamine daturine, duboisine), cocaine and saponin. The following, which also increase its force, ammonium salts, alcohol (ether, chloroform), cactus, arsenical salts, quinine and strychnine, should be cited. Drugs which are known to act upon the accelerator centre are ammonia, caffeine, picrotoxin, cactus and staphisagria. Obviously, many of these drugs present disadvantages, or are not of pronounced action, so that they may be excluded from consideration.

Usually a combination of atropine for diminishing the tone of the vagus terminations, in conjunction with strychnine for increasing the force and frequency of the ventricular systoles, has been advocated. Of course, atropine is useless in affections of the myocardium of which the syndrome is the expression. Alcohol has at times apparently shortened the duration of the attacks. Theoretically cactus, which is found to both increase the force and rate of ventricular systole, as well as to act on the accelerating centre, is indicated. Practically, in those instances in which I have employed it, recovery from the attack and subsequent attacks, has taken place. In the urgency of the symptoms, and they so appear, it should be preceded by ammonia and the gravity of the syndrome warrants its use by hypodermatic injection. The fluid extract is the only preparation of cactus which is recommended, and active specimens are readily obtained at the pharmacies. The dose is thirty minims every hour or two, so long as may be required. After the acute attack is under control, it is well to administer arsenic iodide, in doses of one one-hundredth to one one-fiftieth of a grain, thrice daily, for a considerable period of time.

Since gummata have been frequently found on *post-mortem* examination, involving the column of His, inunctions of oleate of mercury, or better, for immediate results, hypodermatic injections of red mercuric iodide, in one per cent. solution in sterilized oil, in one-fourth grain doses daily should be administered. The insoluble mercury salts have not yielded so favorable an outcome in my hands. In these instances mercury is useful, no matter how much time has elapsed since the primary lesion. In addition to, and contemporaneous with, the mercury, strontium iodide should be administered, increasing up to massive doses.

In addition, a careful study of the patient should be made, and all other pathological conditions carefully studied and, so far as is possible, rectified.—*Monthly Cyclopædia*.

Progress of Medical Science.

MEDICINE.

IN CHARGE OF W. H. B. AIKINS, F. A. CLARKSON, AND BREFNEY
O'REILLY.

Neuroretinitis from Typhoid Fever.

These cases are rare. Clothier declares that out of 200 cases of optic neuritis investigated by Kampberstein, most of them were caused by brain tumors, syphilis, tuberculosis, brain abscesses, meningitis; but in none was the cause typhoid fever. Carpenter has reported two cases of mild bilateral papillitis, due to typhoid fever, in girls of seven and eleven years of age. Both recovered. Reitter and Louber have reported a case in which, during typhoid fever, there was neuritis of the external paplital and then neuritis in the left eye, with recovery in three weeks. Sourdille has reported three cases of papillitis with involvement of the central vessels, during typhoid fever. All recovered.

Clothier claims that the visual disturbance is due either to the effect of the toxins on the nerve elements or to vascular changes.—Translated from *Gio. Internaz.*, by Harley Smith.

Typhoid Agglutination in Tuberculosis.

In some patients treated in Strasburg Hospital the serum diagnosis of Widal having been tried, there was obtained agglutination of the typhoid bacillus, although the further course of the disease or the autopsy proved that they were cases of tuberculosis.

Subsequently special observations were made in a series of cases of tuberculosis. These cases, most of which were severe, were 26 in number, and in none of them did the history show a previous typhoid infection. The test of agglutination was made not only on the typhoid bacilli, but also on the para-typhoid A and B. The reaction was considered positive only when it was produced at a dilution of 1 in 100 and was confirmed macroscopically. Of the 26 cases, 8 gave a positive reaction (six times with the typhoid bacillus, once with the para-typhoid A, once with the para-typhoid B). In four other cases the agglutination

was produced at a dilution of 1 in 50. In two of these cases a first trial gave a negative result, but in further observations the reaction became positive.

From these tests, it follows that the significance of the Widal reaction is not absolute, as the agglutination of the typhoid or of the para-typhoid bacilli takes place somewhat frequently in cases of febrile tuberculosis.—Translated from *Giorn. Intern.*, by Harley Smith.

Digipuratum.

In an interesting article on "Digitalis and the Digitalis Group," Robert Tissot, of Chaux des Fonds, Switzerland, writes of digipuratum Knoll: This is an extract of digitalis leaves from which the inert and irritating constituents have been removed, as is the case with digitonin, for example. This extract is tested by physiologic experiment on the hearts of batrachians; its action consequently is always uniform. One decigram (1½ grn.) of digipuratum acts the same as 1 decigram of active digitalis leaves. Its action is rapid and it produces no gastro-intestinal disturbances.

A pastil of 1 decigram constitutes a single dose. As an asystolic dose it is best to give four pastils the first day, three the second day, three again the third day, and two the fourth day, each dose half an hour after eating. Subsequent doses should be adjusted according to values, to wit: 1 decigram of digipuratum is equivalent to 1 decigram of the very active leaves. According to the author's experience, which is extensive, the digipuratum of Knoll is the digitalis par excellence when time is not pressing too much and when one may choose the gastric route. This remedy contains practically all the active principles of digitalis. This is a great advantage, because, according to a well-known biologic law, several agents acting in the same way are better and are less toxic than a single agent whose activity would be equal to the combined activities of the remedies constituting the mixture.—*Amer. Jour. Clin. Med.*

The one lesson learned from the trypsin treatment of carcinoma is the beneficial effect of trypsin on many varieties of chronic ulcer. It may be employed, without danger, in the form of applications to the surface of the ulcer.—*American Journal of Surgery.*

OBSTETRICS AND GYNECOLOGY.

IN CHARGE OF ADAM H. WRIGHT, K. C. M'ILWRAITH, FRED. FENTON
AND HELEN MACMURCHY.

Missed Labor. Peter McEwan, M.A., M.B., F.R.C.S. Edin.
(*Lancet*, June 29, p. 1826).

A married woman, aged 29, was admitted to hospital on October 24, 1907, suffering from "abdominal tumor." Menstruation had been regular until October 19, 1906, when it ceased. Her abdomen enlarged, milk appeared in the breasts, and she felt quickening. She had morning sickness and thought herself pregnant. The abdominal swelling gradually increased and the amenorrhoea persisted until May 19, when there was a flooding followed by a slight reddish vaginal discharge, occasionally offensive, for 10 weeks. Since then two normal periods occurred—in September and early in October—but the loss was slight. She had had a feeling of weight in the pelvis, mainly on the right side, for the previous 5 months, and her strength did not return satisfactorily. Her abdomen diminished in size from May 19 onwards. She had two children, 6 and 7 years old respectively, and had had one miscarriage (at 3 months) four years ago, after which she was curetted.

There was a slightly hectic flush on the cheeks. The mamæ were large and lax and showed a well-marked areola and secondary areola; no milk could be expressed. The abdomen was distended to about the size of a 7 months' pregnancy. A rounded tumor was felt rising out of the pelvis and extending about three fingers' breadth above the umbilicus. The upper limit of the swelling was rather higher on the right than on the left, and its lateral margins were 1 inch from the right and $3\frac{1}{2}$ in. from the left anterior superior iliac spines. The tumor as a whole had slight lateral mobility. It was firm, and in the right loin hard rounded bodies could be felt and crepitus obtained. The cervix was firm and slightly mobile; the os admitted the finger-tip; the body of the uterus could not be felt apart from the rounded mass which filled the upper part of the pelvis and constituted the lower portion of the rounded abdominal tumor. There was a brownish discharge, slightly offensive. The temperature was 103.6° , the pulse was 130, and the respirations were 30. The tongue was coated. A vaginal douche was given thrice daily.

The temperature remained high, with morning remissions.

ranging from 98 to 103.6 deg. Difficulty was experienced in attempting to pass the sound. Under ether it passed into the uterus for 6 or 7 inches. The cervical canal was dilated first with Hegar's dilators, then with Bossi's dilators, slowly and gently. The hand was passed into the uterus and the shoulder of the fœtus was found presenting. The uterine wall was felt to be intact. The arm of the fœtus was pulled down; the head was cut off with a sharp hook; the body and then the head were extracted easily; the cord remained attached in utero. Much dirty, offensive fluid escaped. A coil of small intestine appeared at the vaginal orifice. It protruded from a rent in the posterior part of the lower uterine segment, slightly to the right of the middle line. The intestine was pushed up. The abdomen was opened by median incision. The omentum and bowel presented. A large, flabby uterus, necrotic, adherent to the intestines, was exposed. It showed no sign of contraction, and was very thin, except in the region of the placenta. The necrotic wall had given way in several places, besides that felt per vaginam. The upper part extended as far as the under surface of the liver, to which it was adherent. The uterus was dissected off from intestine and omentum; parts of the latter being necrotic were removed. A portion of the uterine wall was too closely adherent to be removed with safety, and the surface was pared with scissors. The uterus and ovaries were removed and few bleeding vessels were tied. Some necrotic tissue adherent to the under surface of the liver was scraped, and a drain was left in the loin. The abdominal cavity was thoroughly washed out with saline solution. A packing of iodoform gauze was left as a vaginal drain and the abdominal incision was closed with through-and-through sutures of silkworm gut. Near the end of the operation the pulse failed, and in spite of stimulation death occurred at the end of 15 hours.

The placenta was firmly adherent. Only here did the uterus show anything approaching normal thickness; in other parts it was exceedingly thin and yellowish, and tore readily; there was no obvious muscular structure. The upper part did not bleed when torn. The fetus was not much short of term.

Missed labor is so rare that the diagnosis was not made until the sound had been passed into the uterus. No reason was found for the flooding and offensive discharge on May 19, when there was apparently an attempt at premature labor. The uterine wall, except at the placental site, was exceedingly thin and friable, and incapable of any attempt at contraction or at being manipulated even gently without tearing. Consequently, the

treatment usually advocated, and tried at first—dilatation of the cervix uteri and the removing the contents of the uterus per vaginam—was inadvisable. It appeared impossible to deliver the fetus per vaginam without rupture of the friable uterus. Had abdominal section been performed first of all, the patient would have had a better chance.

Dr. A. Dempsey (*Brit. Med. Jour.*, Sept. 19, 1908) has recorded a case of missed labor in which he dilated the cervix and emptied and washed out the uterus. The patient was seven months beyond term and made a good recovery.—*The Med. Review*.

Motor-car Miscarriage.

Among the frequent causes of abortion is direct mechanical violence. This is operative in proportion to the severity of the injury inflicted and the condition of the endometrium on which the ovum is implanted. When this is healthy and the ovum also, the patient will withstand considerable violence without abortion. A great shock or injury is sometimes better borne by pregnant women than frequency of repeated shock. A familiar example of this is found in abortion following the use of a sewing machine driven by the foot. On the other hand, a patient may sustain a severe fall, fracturing a limb, and not abort.

The presence or absence of consciousness when the injury is received has also a distinct bearing. Under anæsthesia pregnant patients bear operations of considerable magnitude without the interruption of gestation.

The use of a motor car is so common that abundant opportunity is afforded to study the effects of its use upon the health of patients. In the early months of pregnancy motoring is frequently followed by abortion.

Edward P. Davis (*New England Medical Monthly*, May) cites at a meeting of the Obstetrical Society of Philadelphia two illustrative cases, and continues:

“The reason why motoring should be dangerous to patients in early pregnancy seems to lie in the fact that the rapid motion of a motor car subjects the patient to very frequent small jars. These are more or less violent in proportion to the character of the road and the rapidity of the car and the ease with which it works. If the patient sits upon the rear seat of a large car, the motion is usually greater and the shock received in passing over an obstacle much more than if she sits in front. In the latest cars the weight is so distributed that the back seat is more comfortable than in the older models. No matter how smoothly the motor car runs, unless it were upon a track its motion cannot be

as uniform and smooth as that of a railway train; hence the greater danger to which it exposes the patient.

"The characteristics of abortion following motoring are its slow and insidious development without bright hemorrhage and pain, the ovum evidently separates from the wall of the uterus very gradually, blood is extravasated and not poured out, and pain is not excited until the uterus is so distended with blood clot that it is made to contract.

"While motoring is dangerous in early pregnancy, in the latter months of gestation, with reasonable precautions, it may prove exceedingly useful. As a means of obtaining fresh air and inducing sleep during the heated months it is most beneficial if patients can be induced to use reasonable precautions against shock, fatigue and chilling the surfaces of the body."—*Med. Review of Reviews*.

A Plea for a Rational Puerperium.

SIR,—Dr. Haultain's suggestion that the rule of keeping the puerperal patient in bed for several days after her confinement is a lingering relic of the taboo practice of secluding the woman until a rite of purification has been performed is very interesting.

Rest in the recumbent position, spare dieting, and seclusion characterize the treatment of women both during menstruation and the puerperium all over the uncivilized world, for the reason that during these times a woman is looked upon as a dangerous person. This we have all heard about. But what is not so well known, perhaps, is that there are several exceptions to the rule. And the exceptions will, I am sure, prove interesting to your readers, because they seem to forestall von Alvensleben's effort to reform the present practice.

Among some races the patient is expected to get up and walk about after the child is born; among others she is made to occupy a sitting position. This is done, we are told, not out of ignorance or carelessness, but deliberately, in order to facilitate the lochial discharge. The following races, among others, practise or have practised this treatment: The Germans (of the twelfth century), the Chinese, Japanese, Abyssinians, and certain American-Indian tribes.

It seems to be the case, and the delay of this reformation (if it be a reformation) until the present time exemplifies it, that midwifery is the most conservative as well as the most ancient branch of medicine.—I am, etc.,

London, W.

DAN. M'KENZIE.
—*Brit. Med. Jour.*

Fatal Case of Pernicious Vomiting of Pregnancy.

Dr. Drummond Maxwell (*Journal of Obstetrics and Gynecology for the British Empire*, May, 1909) reported this interesting case before the regular meeting of the Obstetrical Section of the Royal Society of Medicine:

The case occurred in a primigravida, æt. 26. The chief features of interest in the case lay in the difficulty of diagnosis, since the patient, after admission to hospital, ceased vomiting, and there was only the history of severe vomiting at home, unassociated, however, with marked wasting. The toxic nature of the case did not reveal itself in any characteristic alteration of the urine; there was no albuminuria; the only ominous signs on admission were drowsiness and a very rapid, weak pulse; there was no jaundice. Patient passed successively through stages of restlessness, delirium, mania and final coma. Autopsy revealed hyaline degeneration and necrosis of the central cells of the hepatic lobules, the kidneys also showing a severe parenchymatous nephritis; sections of both tissues were shown under the microscope. The diagnosis of this distinctly atypical case was uncertain during life, and was based finally on the pathological investigation post-mortem.—*Review of Reviews*.

Extract of Corpus Luteum in Disturbances of Artificial and Physiologic Menopause.

Morley, in the November number of the *Journal of the Michigan State Medical Society*, reports his results in 18 cases. This report is a continuation of the one that appeared in the August number of the *Detroit Medical Journal*. The author used an extract made from the corpora lutei of beef ovaries rather than an extract of the entire ovary, as the consensus of opinion seems to be that the internal secretion of the ovary is produced by the yellow body. The extract is given in five-grain doses, three times a day, one-half to one hour before meals. His results in 18 cases may be summed up as follows:

Five were cured, 12 were improved and one obtained no relief. Included in the 12 cases that were improved are grouped those that are still taking the extract. A permanent cure may result in a few of the cases under treatment. Of the 18 cases, 14 suffered from disturbances of operative or artificial, and 4 from those of natural or physiologic menopause. While the results obtained in so small a group of cases do not warrant the drawing of any definite conclusions, still the author thinks that the results are favorable enough to justify a continuance of the treatment in other cases, where there is a disturbance incident to artificial or physiologic menopause.

OPHTHALMOLOGY AND OTOTOLOGY.

IN CHARGE OF J. T. DUNCAN.

The Prevention of Blindness.

The importance of this subject is again brought before medical men by an article by Bull, in the *New York Medical Journal*. When it is remembered that about *one-fourth* of all cases of blindness are caused by the ophthalmia of the new-born, and that this can be almost absolutely checked, so as to prevent blindness, the responsibility of all who attend at confinements is very great. Fancy a human being hopelessly blind during its whole life, just because of carelessness or ignorance during the first few days of an infant's life! And the danger can be so easily prevented!

Bull reminds us that the various steps in the preventive treatment introduced by Professor Credé are as follows: For several days before the expected confinement the vaginal passages of the woman are carefully irrigated by some antiseptic solution, preferably mercuric bichloride, in order to remove as far as possible all infectious secretions. It is not possible to render these passages thoroughly aseptic, but they can be made relatively so. As soon as the child has been born, the face and scalp should be cleansed with sterilized water, especially about the eyelids. The eyelids should then be opened and one drop of a two per cent. solution of silver nitrate should be dropped into each eye from an aseptic dropper or a glass rod. But little reaction usually follows, but should it occur, it can be readily controlled by cold compresses soaked in a two per cent. solution of boric acid or salicylic acid. If these precautions are adopted, the disease will generally be prevented.

So grave a calamity is blindness from purulent conjunctivitis that the use of this precautionary method has been urged at the birth of every child. There is no doubt of the wisdom of taking precautionary measures such as those of the Credé method. This plan of prophylaxis is at once simple, safe, and inexpensive, and if universally employed would have saved the eyes of many thousand children who because of this neglect have passed their lives in darkness.

Surely, then, a strong case is made for the universal application of Credé's method (or some modification of it, as noticed below).

Some, however, do not advocate its use in every case, but

depend upon notification and treatment after the disease has commenced.

The first essential in any movement of this kind is to bring about a public understanding of the conditions, and secure the sympathy and assistance of the people in our endeavors to carry it out. One powerful means of developing watchfulness and care is the publication in health bulletins of the dangers of infantile ophthalmia, and the possibility of its prevention. Then it is all-important to fix on an effective and satisfactory anti-septic, which can be used even by unskilled hands without causing damage. The author's own experience has taught him that, except where the disease already exists, a two per cent. solution of silver nitrate is too irritating and is likely to cause what is known as "silver catarrh." After a very large experience he now recommends a one per cent. solution as non-irritating and at the same time an effective bactericide. This solution can be employed by inexperienced physicians and ignorant midwives with perfect safety.

Extirpation of the Lacrymal Sac.

Charles S. Means makes it a rule to operate on the following classes of patients:

First.—Cataract patients who come from a distance and have neither the means nor opportunity for taking a long extended course of treatment before operation.

Second.—Nervous or hysterical patients who are unable to bear the passage of probes or even the use of the syringe. (One man I now recall fainted and was so sick he had to be removed to his home every time either a probe or a syringe was introduced.)

Third.—Children that are practically unmanageable, causing not only an endless amount of bother, but also a liability of injury to themselves by resistance.

Fourth.—Long persistent cases that have not responded to careful treatment.

Fifth.—Traveling or transient patients who would be compelled to be under a new physician almost constantly, running the risk of neglect and greatly increasing the expense.

Sixth.—Persons living in rural districts and unable to be away from home for long extended periods and financially unable to return to the oculist.

Seventh.—Where ulcer of cornea is present.

Eighth.—When malignant growths in the sac are to be feared.

Ninth.—When one eye has been lost and constant discharge endangers the remaining eye.

Refraction Cases in Cleveland.

In an interesting article on Refraction Cases in Cleveland, U.S., L. K. Baker (*Cleveland Medical Journal*) has the following suggestive statement in regard to glasses for indigent children:

This introduces the fourth general class, viz., indigents. Ten years ago teachers were instructed to investigate, to such extent as they conveniently could, the cases of poor children, mostly those for whom the Board of Education furnished books and shoes, and report their cases to the Supervisor of School Hygiene on the blanks furnished for that purpose. During the five years the writer looked after these matters, 300 (25%) of the teachers reported very close to an even thousand of these cases. The dispensaries all assisted in refracting these children, opticians sold us glasses at wholesale rates for them and the money to pay for the glasses was all subscribed by private individuals. It became such a task to get people to raise this money for us that I finally arranged with the Infirmary Department of the City Hall to investigate all cases reported indigent and pay for glasses if the pupils were found to belong to this class. Hence at any time during the past five years any child in the city whose parents really could not pay for glasses could be examined at a dispensary and get an order for glasses at the City Hall. Of this, all teachers, principals and district physicians were duly apprised. Last week Mr. Feltzer, bookkeeper at the infirmary office, was kind enough to look up their disbursements for glasses for indigents during the past five years. They are as follows:

September to January, 1904.....	paid for 15 pair
January 1, 1904, to January 1, 1905.....	paid for 26 pair
January 1, 1905, to January 1, 1906.....	paid for 13 pair
January 1, 1906, to January 1, 1907.....	paid for 45 pair
January 1, 1907, to January 1, 1908.....	paid for 42 pair
January 1, 1908, to September 1, 1908.....	paid for 15 pair

This is an average of 32 pair a year, or 156 pair altogether in five years.

Editorials.

ONTARIO MEDICAL COUNCIL.

A special meeting of the Ontario Medical Council was held Dec. 7-10, inclusive, to consider mainly three matters: (1) The "Roddick Bill" and proposed amendments. (2) Application to the Ontario Legislature for an "Enabling Clause" similar to that of the Province of Alberta. (3) Application to the Ontario Legislature for an alteration in the Medical Act, which would enable the Council to deal more rapidly with those guilty of illegal and criminal acts.

We are unable in this issue to give even a synopsis of the discussions at the meeting because, up to the time of writing, we have been unable to get a report of the proceedings. We are told that certain reports in the daily papers were neither complete nor correct. We hope, however, in our next issue, to give a complete report of the more important details, resolutions, reports of committees, etc.

It is rather interesting to note, in connection with the meeting of the Council, that physicians throughout Ontario are taking much greater interest in the work of the Council than they did two or three years ago.

The discussion on the "Roddick Bill" was certainly interesting. They discussed the whole bill and the proposed amendments very thoroughly, clause by clause. We are in a position to say that they accepted most of the amendments which were agreed to at the meeting in Montreal in November, with perhaps one rather important exception as to preliminary training and the standard of matriculation.

A decided pronouncement on this very important question is in itself a decided step in advance, although the goal sought for may still be some distance away. A legislation committee was appointed to confer with the Government or with members of the Legislature at the next session of that body. Considerable discussion took place respecting the status of certain representatives of the universities. There are now in the Council eight

so-called school-men—Dr. McCallum, Toronto University; Dr. Ryan, Queen's University; Dr. Moorehouse, Western University; Dr. Starr, Victoria University; Dr. Johnson, Trinity University; Hon. Dr. Sullivan, Royal College of Physicians and Surgeons, Kingston; Dr. Temple, Trinity Medical College, and Sir James Grant, Ottawa University. It is thought by some that only those universities which have active medical faculties should have representation in the Council.

Some very unpleasant rumors have been in the air respecting the irregularities, if not worse, in connection with payments of examiners. The methods of the Council in respect to payments of its members and examiners have been for many years exceedingly loose and unsatisfactory. We believe that this fact is now recognized by the majority of its members, and we expect that efforts will be made at the next meeting to improve matters in this regard.

WESTERN MEDICAL FEDERATION.

We published in our December issue a report of the proceedings of a meeting of representatives from the four Western Provinces of Canada—Manitoba, Saskatchewan, Alberta and British Columbia—held in Banff, September 28th. Dr. Spankie, from Ontario, was welcomed as a visitor, but took no active part in the discussion. The delegates recommended a Federation of the Western Provinces, but decided not to include Ontario in the Federation at present. They also recommended the appointment of an Examining Board for the four Provinces.

Since that time a committee of the Central Alberta Medical Association has taken one step in advance. The members of this committee evidently consider that such a Federation would not help Dominion Registration, and have expressed a decided opinion in favor of the Roddick Bill, with certain amendments. So far as we can learn, this Alberta committee holds views very similar to those expressed by members of the Ontario Medical Council at the last special meeting.

There are still difficulties in the way, but we do not agree with our pessimistic friends who think Dominion Registration is still *a long way off*, and that nothing of any consequence has been accomplished lately in the way of surmounting the obstacles which are continually arising as negotiations go on. We feel certain that a great amount of good has been accomplished during the various meetings held during the last few months, including those at Winnipeg, Banff, Edmonton, Montreal and Toronto. The men who are honestly devoting their energies on constructive work in the interests of our profession in the whole Dominion are increasing in numbers, and we hope that satisfactory results of their work will soon be in evidence.

THE RETIREMENT OF MISS SNIVELY.

The development of training schools for nurses during the last 50 years has been marvellous. It is practically impossible for one who knew nothing about the training of nurses up to five or ten years ago to have any adequate conception of the wonderful advances which were made in the latter part of the 19th century.

A most prominent figure in this development in Canada was Miss Snively, of the Toronto General Hospital. She was placed in charge when the training of nurses in that institution was in an unsatisfactory condition. Soon after her appointment there was a change, in fact a complete transformation. We think it will generally be conceded now that this Training School, during the last twenty years, has been the best in Canada, and perhaps in North America.

In most of the meetings and conventions of nurses and lady superintendents that have taken place on this continent during these years, Miss Snively has taken an important part, and has probably occupied more positions of honor in these various associations than any other one person.

She was a very strict disciplinarian, and her methods, in

the opinion of many, were rather harsh at times, and her supposed partiality for favorites was often commented on. The writer has no desire to discuss such details, but would prefer to acknowledge with gratitude that he often received invaluable assistance from her during the many years in which he was engaged actively in the work of the Hospital, and especially in the Burnside.

During her whole career in Toronto she always displayed very great ability and absolute independence. She feared *no man* nor no set of men, and the man or men who thought otherwise for a time, and acted accordingly, almost invariably failed to win out.

There was a large gathering at the General Hospital, Dec. 2nd, when a purse of \$1,000 was presented to Miss Snively. The Chairman of the Board, Mr. J. W. Flavelle, occupied the chair, and announced that the Hospital Board had decided to give her a retiring allowance of \$700 a year as a mark of their appreciation of her services to the Hospital during the last 25 years. Mr. Flavelle also expressed the regard in which Miss Snively was held by the Board. She asked a year ago to be relieved, but was requested to reconsider the matter and remain a few years longer. She recently again asked for relief, as the burden was becoming too heavy. No time was set for her resignation going into effect, but she wished to retire not later than next June.

HYDROPHOBIA.

A number of our Canadian folk left the Province of Ontario for our neighboring country south of us about the middle of December, under depressing circumstances. Eight people had been bitten by a mad dog in the town of Galt. Dr. Walker, a physician in Glencoe, 50 miles from Galt, was also bitten by a dog in his own village. About the same time there was another mad-dog scare in the village of Markdale. At least nine persons went to the Pasteur Institute, in New York, for treatment. Fortunately, the results in that institution have been exceed-

ingly satisfactory. Dr. Randaud tells us that there have been only three deaths out of the last 1,800 people treated there.

We live in a very prosperous and wealthy Province in the Dominion of Canada. We have what is called a progressive and democratic government. That government boasts of a big surplus. It also boasts that it spends a large amount of money for the education of the masses. It endeavors to educate the people in many directions. Its work in all these directions, both in the interests of human beings and the lower animals, is worthy of all praise. There are in this government two physicians. Might we ask these worthy men to bring a certain matter before the Cabinet? Although these men are well versed in matters both medical and political, it may be that they do not happen to know that there is a Pasteur Institute in the City of New York, while there is no such institution in the big, wealthy Province called Ontario.

THE PREVENTION OF TUBERCULOSIS.

A very important discussion on tuberculosis took place in the House of Commons December 13th. Mr. George H. Pearley, Vice-President of the Canadian Association for the Prevention of Tuberculosis, proposed the following resolution: "That in view of the encouraging results which have come from the money already spent in disseminating information regarding tuberculosis, and of the interest which the people of Canada are taking in this question, and also in view of the great saving in life which has been brought about in other countries by practical work in this connection, this House is of the opinion that Parliament should now take more active steps to further lessen the great suffering and mortality caused by this disease."

In speaking of the resolution Mr. Pearley said that, apart from human considerations, there is an immense money loss due to tuberculosis. The cost in the United States of every consumptive who dies is \$8,000. As at least one in 38,000 people die of tuberculosis in every year the total money loss is almost beyond

comprehension. In Canada from 8,000 to 10,000 die annually; of this number half could be saved. Figuring each life as only worth \$1,000, and the loss through incapacity and suffering be another thousand dollars, we find a yearly loss of from sixteen to twenty million dollars.

The fight against the disease has really only commenced, and the public scarcely realize yet the seriousness of the situation. Tuberculosis is not as a rule inherited, and the disease is curable if taken in time. He thought the present grant of \$5,000 a year to the Canadian Association should be increased. Information should be disseminated, and lectures delivered by experts for the purpose of interesting the people in every locality and inducing them to form local associations.

Railway cars and steamers should be kept free from infection. Drs. Beland, Black, Roach, Schaffer and others supported the resolution. The Honorable Mr. Fisher, on behalf of the Government, accepted the resolution, and said the Government would ask for a larger grant to the Association. He would not, however, enter into the field of building sanatoriums. He added that the Provinces of British Columbia, Manitoba and Nova Scotia were doing good work in that direction.

FRESH AIR AND HEALTH.

The public generally understand that fresh air is very important from a health standpoint. We get sermons and lectures on the subject from various quarters. Notwithstanding all our knowledge, however, it is probable that there is no country in the world where houses and offices are so thoroughly impregnated with foul air, from early Fall to late Spring, as in Canada.

We clap on double windows, and keep our houses as nearly hermetically sealed as possible.

Our dear good mothers take extra precaution in protecting their young babies and children from drafts. The little ones

are frequently brought into the most ill-ventilated room in the house for their baths. To make conditions in the room worse, one of those terrible abominations, the gas stove, is often set going, and consumes nearly all the oxygen there happens to be in the atmosphere of the room. After getting their baths, the unfortunate little ones are left in these cosy rooms for two or three hours to breathe chiefly carbon-dioxide.

A very sensible letter, signed by C. N. Merritt, appeared recently in the *Toronto Mail and Empire*. The writer referred especially to tuberculosis, which was frequently caused by long exposure to impure air, the chief feature being the lack of oxygen in the air. The writer says: "I have often gone into public offices in Toronto where the air was so charged with carbonic acid gas that I could not remain there ten minutes. I do not pretend to give any scientific reasons for these things. There are numbers of public buildings and offices that are never properly ventilated from the time the furnaces are lighted till the hot weather comes. I am sure the same may be said of most of the schools."

There is nothing new about this, of course. The men downtown in these badly ventilated offices know more or less about the evils of contaminated air. They have certainly been told often enough about the matter. Notwithstanding all their knowledge, however, they shiver when a breath of fresh air enters the office, and proceed immediately to shut everything up tight.

BRITISH MEDICAL ASSOCIATION.

The Annual Meeting of the British Medical Association for 1910 will be held in London, Eng., next July. The last meeting in London was held in 1895 under the Presidency of Sir Russell Reynolds.

The *British Medical Journal*, in commenting on the subject, expresses the opinion that the visitors of 1910, who visited the city in 1895, will be struck by the remarkable progress which

has taken place in that city during the interval, in many directions. Many of the London hospitals have been transformed during this time.

The *Journal* thinks that in Mr. Butland, the President-elect of the Association, the members have an ideal chief, whose infectious enthusiasm will permeate the numerous bands of workers which have already been organized to secure the success of the meeting.

In addition to the meeting of 1895, the Association held its annual meeting in London on two occasions. The first was in 1862, when Dr. Geo. Burrows was President. The second was in 1873, when Sir Wm. Ferguson was President. It is expected that invitations will be given to the Association to hold the annual meeting in Birmingham in 1911, and in Liverpool in 1912.

THE DANGERS OF FOOTBALL.

We have lately received considerable information respecting the dangers of football from prominent athletes and trainers of athletes in the universities of the United States. We are told that the question of condition is a very important one in estimating the dangers connected with the game.

We are told that, in football, if a man is in perfect physical condition, he rarely gets seriously hurt. He may be bruised, or "laid out" for a short time, but nine times out of ten he will feel ready for another game the next day. It has been noted that three-quarters of the bad football accidents occur early in the season, the assumed reasons being that the players have not toughened up. We find this statement in an article which recently appeared in the *Toronto Mail and Empire*. The article goes on to state that most of the remaining accidents happen in the last game or two; that the players have been weakened by the hard season's play, and are stale from too much practice.

We are also told, on the other hand, that over-training involves about as many dangers as under-training. An example of over-training is found in two places. West Point and

Annapolis. The soldiers of these two places are practically in training all the year round. The extra training that they go through before playing their matches makes them stale, and the result is that more men are injured on the West Point team than on all of the university teams. Murphy, the trainer of the Yale team, tells us that he is unable to recall a single fatal accident that ever occurred at Yale, Princeton, Harvard, Pennsylvania or Cornell. We think, perhaps, our friend, Harry Griffiths, the worthy coach of the Toronto University football team, could give the world some pointers on this subject.

NOTES.

A fine of \$50 was imposed upon a dairyman of Winnipeg convicted of watering milk December 14th. He had been convicted before on a similar charge.

Magistrate Denison registered a conviction against Andrew B. Henderson, of Toronto, an osteopath, for a breach of the Medical Act, December 13th. His Worship imposed a fine of \$40 and costs. The counsel for Henderson stated that he would enter an appeal.

As a result of certain experiments of "cold air" rooms in a couple of the public schools in Chicago, it was decided about December 14th to have lower temperature for the schools, airing of class rooms several times a day, and a general campaign for health conditions for the children in attendance.

"Shaky Hands."

We are asked should a surgeon personally drive an automobile just before performing a delicate operation. We do not happen to know any reason why he should not, but we know that motor driving is what might be termed hard work, and a surgeon or any other person may overdo it, and as a consequence might have shaky or weakened hands. We are told by certain observers in some of the operating rooms in Toronto that in many instances the assistants now have to thread all the needles used.

New Central Prison.

We are pleased to note that the Government has finally decided to move the Central Prison from its present site in Toronto. Three farms have been bought near Guelph, after a very careful examination of many other properties in different parts of the Province. There seems to be a general consensus of opinion that the property selected will be very suitable in all respects.

The Ontario Asylum Service has opened an Out-Patient Department, under the title of the Ontario Clinic for Nervous and Mental Diseases. The patients will be seen on Wednesday and Saturday mornings in the Building in Chestnut Street occupied by the Gynaecological Service of the General Hospital. The members of the staff in attendance will be glad to look after any patients that may be referred to them by general practitioners. The aim of the undertaking is to supply advice and help to the patients through the application of various psycho-therapeutic measures of treatment, besides early cases of the psychoses, and such as dementia praecox, depressing insanity, etc. Patients suffering from such mental maladies as obsessions, hysteria, fobius, and anxiety neurosis will also be accepted for treatment. No persons suffering from organic disease of the nervous system will be treated. The treatment given in the clinic will be under the direction of Drs. C. K. Clarke and Ernest Jones.

Personals.

Dr. J. Orlando Orr, of Toronto, returned from Great Britain December 13th.

Dr. Charles B. Shuttleworth has removed from 45 Bloor Street East to 478 Huron Street.

Dr. Jas. Francis Williams, of Bracebridge, sailed from New York for the Mediterranean December 4th.

Obituary.

HERBERT CHARLES WILSON, M.D.

Dr. H. C. Wilson, of Edmonton, Alta., died at his home, Friday, Dec. 17, aged 51. In his younger days he lived in Prince Edward County, Ontario, and received his education at Trinity Medical College, Toronto. He graduated from that College in 1882, and shortly afterwards went to the North-West Territories, where he practised up to a short time before his death.

Book Reviews.

THE PRACTITIONERS' VISITING LIST FOR 1910. An invaluable pocket-sized book containing memoranda and data important for every physician, and ruled blanks for recording every detail of practice. The Weekly, Monthly and 30-Patient Perpetual contain 32 pages of data and 160 pages of classified blanks. The 60-Patient Perpetual consists of 256 pages of blanks alone. Each in one wallet-shaped book, bound in flexible leather, with flap and pocket, pencil with rubber, and calendar for two years. Price, by mail, postpaid, to any address, \$1.25. Thumb-letter index, 25 cents extra. Descriptive circular, showing the several styles, sent on request. Lea & Febiger, Publishers, Philadelphia and New York. The best visiting list for this year.

AN EPITOME OF DISEASES OF WOMEN. By Charles Gardner Child, Jr., M.D., (Yale), Clinical Professor of Gynecology, New York Polyclinic Medical School and Hospital. 12mo, 210 pages, with 101 engravings. Cloth, \$1.00, net. Lea & Febiger, Publishers, Philadelphia and New York. 1909. (Lea's Series of Medical Epitomes. Edited by Victor C. Pedersen, M.D., New York.)

As an epitome, the little volume before us is very complete and up-to-date. It certainly goes over the whole subject, and is brief, necessarily. It, like all of the Epitomes, serves a useful purpose of quick and ready reference, aiding one at the moment, or sharpening up a memory, but for complete understanding, the larger works must be referred to.

A TEXT-BOOK OF SURGERY. By George Emerson Brewer, A.M., M.D., Professor of Clinical Surgery, Columbia University, New York. Surgeon to the Roosevelt Hospital, etc. With 415 engravings and 14 plates in colors and monograms. Skin edition, thoroughly revised and much enlarged. Lea & Febiger, New York and Philadelphia. 1909.

This is an admirable text-book and is well suited for both students and practitioners. There are 870 pages of reading

matter in addition to an excellent index. This means that the book is a very convenient one and (to use the words of the author) may be considered to occupy a position midway between the brief manuals and the more voluminous treatises. The book is well published, well illustrated, is very readable, and in all respects up-to-date.

PROGRESSIVE MEDICINE. A quarterly digest of advances, discoveries and improvements in the medical and surgical sciences. Edited by Hobart A. Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia; assisted by H. R. M. Landis, M.D., Assistant Physician to the Out-Patient Medical Department of the Jefferson Medical College Hospital. December 1, 1909. Lea & Febiger: Philadelphia and New York. \$6.00 per annum.

This volume contains articles on diseases of the digestive tract, by Edsall; of the kidneys, by Rose Bradford; surgery of the extremities and joints, tumors, anesthesia, shock and infections, by Bloodgood; genito-urinary diseases, by Belfield; and a practical therapeutic referendum, by Landis.

All the work in this number is of a very high order, and we consider the volume of exceptional merit. *Progressive Medicine* has come to our desk for such a long time that it has become absolutely indispensable. Should we wish the references to some work done within the last year, we have only to take down the last number of this excellent quarterly and look up the proper article to get all the information needed. Everything is epitomized in the best possible way, opposing views are stated fairly, and altogether the journal is the most satisfactory in the English language.

Miscellaneous.

Dr. Gaudichard, in a recent number of the *Répertoire de pharmacie*, comments on the knowledge of the ancients as regards opotherapy and its various ways of utilization. Thus in the early centuries we find that the products derived from the animal kingdom were in the shape of powders. This primitive notion was necessitated on account of the rudimentary states of all tools at this epoch. Preference was controlled by circumstances. In the fifth century, Sextus Placitus Papyriensis advocated the use of the animal vulva, desiccated and pulverized. In the sixteenth century various parts of animals were first roasted, then burnt, after which pulverization was easily effected. At this period thought was also given to the conservation of organic products by sprinkling them with yellow sandalwood, or surrounding them with wormwood. The animal powders were even combined with other remedies. Baudon, in his pharmacopeia, writes as follows: "The electuary of lungs is prepared by mixing sugar with equal parts of the lung of the fox, liquorice juice, maidenhair, fennel and anise-seeds." And in the seventeenth century, Van Helmont placed desiccated blood above all other preparations. Organic extracts, though not called by this name, were utilized in ancient times. In the beginning of the Christian era (about 65 A.D.) Dioscorides, of Anazarba, a Greek physician, who had gained renown by a treatise on materia medica, wrote to this effect: "The liver of the hedgehog, dried in the sun in a pot exposed to the full rays of sunshine, taken with honey, benefits and cures diseases of the kidneys and dropsy." A bouillon prepared after a fox's lung had been desiccated was considered an excellent draught in all cases of difficult breathing. Pliny prescribed hogs' testicles, macerated in milk, in epilepsy. In the centuries which followed, macerated testicles did not lack in popularity. Joseph du Chesne's favorite prescription as an aid to conception was rams' testicles soaked in wine and then dried. Afterwards they were pounded, macerated and boiled over a slow fire in two litres of malmsey, a wine of Napoli di Malvasia. Here is surely an extract that can well hold its own among all extracts!

Syrups containing extracts from animal organs were not ignored by the ancients. The archives devoted to opotherapy abound with enough instances to show that these preparations were held in high esteem in the earliest centuries. Dioscorides, in his "Materia Medica," recommends for a cough the daily use of

an electuary composed of the lung and palate of the deer, dried on a dung-hill and then thoroughly beaten up with honey. Pliny is of opinion that the best remedy for hemoptysis is a pâté of snails, a preparation not unknown to our modern pharmacopeia. Incontinence of urine was combated by the administering of macerated bladders mixed with salt or honey, so that absorption might the more readily be effected. In splenic affections, John of Cuba prescribed beef spleen mixed with honey. And finally, Dusseau hit upon what he thought was a great discovery when he evolved his powerful aphrodisiac, consisting of birds' brains, to which were added the yolks of eggs and honey!—*Interstate M. J.*

Constantly Favorable Results.

Dr. John Arthur Diggle, Med. Ref. Globe Accident Assur. Soc. of London, Eng., in writing of antikamnia tablets, says: "I may state at the outset that they satisfied me well, and the constantly recurring favorable reports prove that most who have given them a fair and thorough trial are quite satisfied with the results which have followed. They seem to be absolutely safe in exhibition and to have no effect whatever on the healthy human organism. Such a safe analgesic and antipyretic is a perfect god-send in these days of 'nerves' and all the resultant neuralgias developed under our civilization. In the cases in which I have used antikamnia tablets I have never noticed any ill effects. As an analgesic, in my experience, the sooner the remedy is administered after the onset of pain, the quicker the relief, and the smaller the amount of the drug required; this would follow almost of course, but I think the oftener the dose is repeated in judiciously small doses, the better the result, as compared with larger doses less frequently given. Given in such doses, and at such intervals, I have found antikamnia tablets most useful in neuralgic cases and acute rheumatic attacks, and in sudden nervous attacks with severe pain. In case of paraplegia, in which the suffering from pain in the paralyzed limbs was agonizing, and had only yielded before to gradually increasing doses of morphine hypodermically, their effect was, and continued to be, good. In a case of typhlitis both the analgesic and antipyretic properties were signally shown. In some cases of dysmenorrhoea one or two tablets relieved the pain, and the after use of caulocorea for a while prevented its return. The rapidity with which they acted in some cases of migraine seemed simply marvelous."

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No. 2

Original Communications.

LAW AND MEDICINE.*

BY THE HONOURABLE MR. JUSTICE WILLIAM RENWICK RIDDELL,
King's Bench Division, H. C. J., Ontario.

I am delighted to meet the members of the Aesculapian Club. I am reminded of the story of your eponymous hero, Aesculapius, the father of all physicians. It is said that he was the son of Coronis by Apollo. While he was still *in utero*, or, as we say in law, *en ventre sa mère*, his mother was slain by her jealous lover; and when her body was to be burned, Hermes saved the child from the flames, having successfully performed the Caesarean operation. Thus early in the history of the science is proved the efficacy of the knife.

"Which things are an allegory." "Coronis" means nothing else than "that which is curved or crooked." Is the plain meaning not that Apollo, who had to do with man's disease and health, called in the assistance of what was crooked (a clear allusion to bread pills and the like), and so brought forth something new—the medical profession? Of course the story of the child escaping the fire through the assistance of the god of trickery is significant of how the medical profession *does* get out of a hot place with the help of —. But I do not further pursue the subject.

The temptation is, of course, very strong indeed to consider the story as an indication of the view of the ancient Greek that it took a god to "get onto the curves" of the medical man. But the Greeks were a wholly sane people; and they never could have suggested even in their mythology that the god of the sun himself could do *that*. So that view is quite excluded, even if it

* An address before the Aesculapian Club of Toronto, January 14th, 1910.

were not the fact—as I must regretfully admit that it is—that there is no really satisfactory evidence that the word “coronis” ever was used in any Greek expression corresponding to that in our vernacular which I have employed. So we may be thrown back on the other interpretation.

Or am I quite wrong? And does the story not mean that the bright god who has the power to ward off plagues and epidemics and to relieve mortals from disease, evolved from the crooked Shamanism and quackery of the existing pretended healing art a new and better science—thereafter destroyed the old; and the new science became a living and active force through the study of nature? For Hermes was the god of nature as well as the god of thieves.

The story that he was brought up by Cheiron the Centaur may indicate the dependence of the G. P. upon his stable-man; or it may show symbolically that he must work like a horse, though with the brain and intelligence of a man.

Whatever be the true interpretation of the myth, it seems to me—notwithstanding the doubts sometimes expressed—as clear as anything can well be in the absence of contemporary record, that the ultimate source of the medical profession is to be looked for in that body of men found in all peoples of a certain grade of civilization, in which the priest and physician are one and the same person—“Medicine man,” “Shaman,” or whatever the name he may bear. The origin is, of course, lost in antiquity.

In the profession of the law, on the other hand, we can trace with reasonable certainty, beginning and advance. As law at first was in no way different from the customs of the tribe, supposed to be thoroughly known to all, there was no need of the advocate; and it was not till comparatively late in history that advocacy appears as a profession. Take Athens, for example—the Court consisted of a defined portion of the freemen of the State. All the people took part at some time as jurors, and the litigant addressed the people assembled. In time it became the practice of the litigants to procure speeches to be written for them by skilled dialecticians, but counsel was not, at first at least, called in.

In Rome, indeed, rather early the advocate did make his appearance—the effect of his eloquence and skill everyone knows. In England it was well within historic times and during the Plantagenet period that we first hear of barrister or attorney.

And in the subject matter of the sciences, there has been a like difference.

Real medical science may be said to have begun with rational empiricism and experiment. The story may not be accurate that the first system of medicine was based upon a comparison of the remedies which patients had found beneficial, the treatment and the result being recorded in the Temple of Aesculapius. But whether that be so or not, there can be little doubt that it was by some process of observation and comparison of the results of remedies that system, however defective, was introduced into medicine. This must needs be a science of observation and experiment—and most of the absurdities of mediaeval (you will observe how careful I am to particularize and emphasize “mediaeval”) physicians arise from the fact that they tried to make everything fit into a preconceived theory—itsself the result of immature and unfounded generalization. Modern medicine has generalized; but that process has been held in check, and theory made to give way to fact, not fact to theory.

In law, empiricism is out of the question. The customs of the clan, tribe or nation are established facts—the early kings and judges indeed received illumination from the gods, but the “themistes” so received were delivered by them to the people; and these again were established facts. And where the customs of the people were not supposed to be known to all, but were treasured up by a college of priests or the like, the customs were none the less known facts. The law then was a matter of authority, not of experiment—that litigant had success who managed to keep closest to what authorities laid down for his guidance, while that patient was not always the most fortunate who was treated most *secundum artem*. (Of course again I am speaking of very remote times and with no reference to the present.)

It is most interesting to compare the views of medical men now with those of their remote professional ancestors. At first, and for ages, all disease was supposed to be caused by an angry god, either by immediate stroke or through the agency of a daemon or sprite—disease was the act of a being indefinitely great as compared with man. Now, at this long last, it is the indefinitely minute, the bacillus, the coccus, the spirillum. Formerly the god had to be propitiated by sacrifice; now the potent mischief-maker must feed itself to death, or be met by some entity still more potent.

It is not exactly so in law; but not wholly dissimilar. In olden days it was all custom; and the customs were believed not to be of human, but of divine origin. The founding god or the eponymous hero of the clan had laid down the rules his descendants were to observe—violation of any of these rules was sin and

crime (there was for ages no distinction between sin and crime), every member of the community had a right to the observance of these rules by others, as well as the duty to observe them himself. And it was the god or the deified ancestor who inspired the king or judge in deciding what was the right, that is, what was in accord with the original plan. All law was divine, and from a divine law-giver; and man could not make or change. "Great Pan is dead," the gods have passed away, the heroes have lost their traditional power; it is recognized that man may—and must—make rules for himself—*vox populi* is now indeed what *vox dei* was supposed to be; and for all practical purposes *vox populi est vox dei*. Nor god nor king has "the right divine to govern wrong": that is reserved for elected Parliaments and Legislatures.

Far be it from me to compare the sovereign people or their representatives to the bacillus, the spirillum—but from a god to a voter is in the same direction—though the distance may perhaps not be quite so great—as from a god to a typhoid germ.

And both professions have profited by the change. In medicine, the supernatural is almost if not quite effete. No longer is that grim passage of Scripture quoted, "And Asa in the thirty and ninth year of his reign was diseased in his feet until his disease was exceeding great. Yet in his disease he sought not to the Lord, but to the physicians. And Asa slept with his fathers." [I pause here to say that it may have been his name, which means "physician," that made Asa prefer the doctors; and I further remark that it seems to have taken two years for them to kill Asa, even with this disease of the "feet."]

Nor would now much, if any, attention be paid to such an argument as was with fiery ardor launched against Simpson's proposition to use chloroform in midwifery. The Scottish clergy inveighed against the practice as sinful, as being, they said, an attempt to interfere with the primal curse laid upon the woman: "In sorrow thou shalt bring forth children." Simpson, indeed, replied with some effect that the first surgical operation on record was anaesthetic; for when the excision of one of the costae was to be made from our first ancestor, the Operator "caused a deep sleep to fall upon Adam, and Adam slept."

No plague or epidemic comes now from the superior, but from the lower and controllable—and nothing is sacred to the hygienic physician.

And in like manner all reverence is lost for old ideas in law—we know now where our law comes from; if we do not like it, we change it; the new is ruthless with the old. It is a distinct

gain that we have learned that nothing is valuable simply because it is old, or true because our fathers said it. The Homeric heroes boasted themselves as being greater than their fathers—we should be ashamed if we are not greater than ours. We have had all the opportunities they had, and more; all the examples they possessed and theirs in addition.

But while our law is thus in a state of flux, it must not be forgotten that immensely the greater portion of it is in principle the same as it has been for centuries. While in medicine, in not one case out of twenty can a physician gain any practical advantage by consulting an authority twenty years old, in law there is not one case in twenty in which authorities much more than twenty years old will or may not be—if not conclusive, at least of advantage. A physician who has been in practice twenty years will have twenty times as much to unlearn as his brother of the same age in the legal profession—the former generally must

“Be not the first by whom the new are tried,
Nor yet the last to lay the old aside”;

but with the latter “*novum et ad hanc diem non auditum*” is anathema as it was to Cicero, one of the greatest of his tribe; and his rule must be “What is new is seldom true; what is true is seldom new.” *Immer etwas Neues, selten etwas Gutes.*

With their varying functions and in their different spheres, the two professions of law and medicine have the same object in view—the good of the people—incidentally, of course, the good of the practitioners themselves. Lawyers, I know, are often charged—as though that were, if not a crime, at least a sin—with practising for money: physicians with insisting upon as great remuneration as possible for their services. We have good authority for the doctrine, “The laborer is worthy of his hire.” And while I do not deny that both doctor and lawyer work for and expect to receive money, I have not found as yet any branch of trade, any business or profession which is different in that regard. The farmer does not carry on his farm just because he will thereby increase the wealth of his country; the mechanic is not wholly altruistic; the merchant will shut up shop if he cannot get paid; the valuable services of the press are not uncommonly billed at twenty cents per line, and when the child of a clergyman was asked if his father was going to accept a call to another church at a larger salary, he said, “Well, pa is still praying for guidance, but ma is busy packing.” “The chieftain to the Highlands bound,” who cried

“Boatman, do not tarry;
I will give you a silver pound
To row me o’er the ferry,”

was told indeed by “that Highland wight,”

“I’ll go, my chief, I’m ready;
It is not for your silver bright,
But for your winsome lady.”

But the poet (being a Scotsman and consequently truthful) does not venture to say that that Highland wight did not have in his sporran that same silver pound before the boat left the dock. If he did omit this trifling formality, he was different from his countryman spoken of the other day in *Punch*, who said to the passengers upon his ferry-boat, when the storm became dangerous, “There’s nae sayin’ what may happen; sae Aw’ll just tak’ yer fàres.”

This I can say—I was at the Bar for over twenty-three years and have been on the Bench three more; and I have never known or heard of a case in which anyone, however poor, with any fair semblance of a righteous claim, who could not have his case put before the courts by a member of the Bar with all energy and skill; in most cases without any reasonable hope of remuneration—and if any person sick or maimed should suffer because a doctor could not be found who would attend him gratis, the whole country would be filled with the outcry.

Both professions are given certain privileges for the common good and both make it, or should make it, clear that these privileges are exercised for the good of the community. Just so soon as either fails thus to pay for its privileges, the people have the right—and should exercise it—of taking these privileges away. But that day I venture to think is far distant; and will, indeed, never come if the practitioners of the two professions continue to act as they have done in the past and are still acting.

The two professions have generally lived in harmony, though each has its jest with the other—the lawyer jibes the doctor that his failures are six feet below ground; the doctor retorts “and yours are six feet above.” The doctor “jollies” the lawyer about charging \$100 a day at a trial and pumping up tears before a jury; the lawyer replies, “a trial is a major operation, and mighty few doctors will take as little as \$100 for an excision of the appendix if they can get more. A trial is a struggle against a mortal antagonist for rights claimed on behalf of the client. Treatment of a disease is a struggle for the life of a

patient against the antagonist whose name is Death—and a physician who would not pump up tears or anything else if he thought that he would thus win his fight would not be worth much; and the arguments of a counsel could not be more fallacious than the *placebo* treatment with colored water and bread pills.”

Indeed, the thought that both are often engaged in a struggle for another is one which should bind the professions together. I am not sure which has the easier task.

The doctor is ever in fight with that dread antagonist who must conquer some day—that antagonist sits at the other side of the chess-board and watches every move; he is in no haste, but while he plays fair, he never makes a mistake himself, and he relentlessly exacts the full penalty for every mistake of his opponent—and unfortunately that opponent does not know all the rules of the game. The lawyer has an antagonist fallible as himself and one who does not always pursue his advantage; but all the rules of the game are known. Which contest do you prefer?

Do you prefer an antagonist, invisible, without haste, rigidly fair, absolutely infallible, who knows (what you do not) all the results of every act, or him who is visible, mayhap hurried, seeking advantage, but making mistakes like yourself and with the same knowledge as you?

Whether it is from their lives being lives of conflict or for some other reason, the two professions have always fraternized with each other more than with the sister profession of theology. I say *the* sister profession—for many years, and, indeed, until within our own day, there were only the three professions in civil life. Now sisters, then unborn, are crowding round the family table and claiming as of right a seat at the family board on an equality with the three older sisters. Dentistry, civil engineering, mining and electrical engineering, and the like have ceased to be trades and become professions—like the debutante who adds to the train of her gown, while she shortens it above and “comes out,” these have laid aside the child, and claim to be full grown. And there are others coming.

I can see no reason why that fellow feeling between your profession and mine should not continue; and, on one side at least, increase.

You all know the old story of the Scotswoman who said to her friend, “It’s nae wonner we lickit the French at Waterloo—oor men prayed.” The friend asked, “But dinna ye think the French prayed too?” Her ready reply was, “Nae doo’t—but

wha could unnerstan' them, jabberin' bodies?" I do not vouch for the theology—but there can be "nae doo't" that the ability of one to understand another makes for sympathy and harmony.

In the past the terminology of the physician was not difficult—at least, anyone with a little knowledge of Greek and Latin could easily follow it—the language of the law was indeed derived in large part from the Latin, but with the most extraordinary perversions from the original and classical meaning. The other day, at a meeting of the Bar of one of the United States I told them that I looked upon myself as a brother: their terminology was familiar, and especially their Latin; and I added "If I find myself in a body of men who pronounce Latin correctly and according to quantity, I may be amongst scholars, but I know that I am not amongst common-law lawyers."

There were in the old law many terms which were used in what anyone but a lawyer would call a non-natural and certainly a wholly technical sense. Let me tell you a story. A doctor and a lawyer were disputing about their respective professions, and the doctor particularly found fault with the language of the law. "For example," said he, "who can understand what you mean when you speak of 'levying a fine'?" "Oh," said the lawyer, "no doctor can be expected to understand that, for it is equivalent to 'suffering a common recovery.'" I do not wonder that that story has fallen flat; no one who has not studied the old law can even understand the language—at a dinner of lawyers, the story is always a brilliant success.

Now all that mystery of the law is about gone—our laws are becoming simpler and so is our language—for the intricacy of the old rules is being substituted common sense. Except in real estate, there is not much that a layman cannot follow and understand.

The very opposite is the case in medicine; the microscope has revolutionized not only the principles, but also the nomenclature. Not many years ago Huxley could say that the student of medicine should put two full years at the beginning of his course on the study of anatomy and physiology alone—in anatomy to such an extent that he *knew* it, not simply that he could recollect if he had time, but so that if he were waked up in the middle of the night and asked he could immediately answer (because he knew his anatomy like the multiplication table) any question on any bone, muscle, nerve, vessel or tissue in the human body. Now, I venture to think, no one would advise so much time to be taken up even in anatomy and physiology when so many other things are to be learned—and if not known, at least known about. No

one cares nowadays for the marking on the body of the Spanish Fly, and a teacher of *materia medica* does not venture into the minutiae even of twenty years ago. The student has not the time—there are more important things to be learned. And the terminology is being developed and extended and changed in the same way—the new wine cannot be contained in the old bottles.

No lawyer can know much about medicine of the present day—though there was nothing to prevent Dr. Rolph in his time being master of both sciences, there are now too many facts to be learned.

I have for some time been preaching the doctrine that a little knowledge of the procedure in the courts should be taught as an integral part of medical education, at least to those who desire it. Some years ago I prepared and delivered to the medical students of the University a series of lectures on "The Doctor in the Courts"—The Doctor as Judge, as Plaintiff, as Defendant, and as Witness. These were received with some approval; and it is perhaps rather a pity that someone has not continued the series. Such lectures should be given by one who is actively engaged in the law—it would be no more absurd for a lawyer who knew surgery only from the books to attempt to teach surgery than for a doctor who had only read about law to try to teach law.

Of course the objection is want of time—and that objection may be valid—but it does seem to me that, considering the enormous importance to the practitioner in medicine of an elementary knowledge, at least, of the law by which he is specially governed, some place might be found for such a study—even if only optional with the student himself.

I cannot but think that the members of the two professions have much in common, much to learn from each other, and should see much of each other. Perhaps some means may be found whereby their intercourse may be increased—it will do both good.

And now I must stop. I fear, as it is, I have talked too long. I conclude by wishing this society and the profession of which its members form a part all the prosperity future years can give. "By their works ye shall know them." The only physician whose name we know in Gospel times was Luke, "the beloved physician." I sincerely hope that all physicians will be called by their patients and the people "beloved," because they have deserved the appellation by their works.

AESCULAPIAN CLUB—PRESIDENT'S ADDRESS— JANUARY 24th, 1910.

BY GEORGE STERLING RYERSON, M.D.

Gentlemen,—Time-honored custom impels me to address a few words to you as your newly-elected President. I am the more willing to bow to this custom as this is the first meeting of this Club, a club which we believe has a useful function to perform in our civic and professional life. Let me extend to you the right hand of fellowship and bid you welcome.

The founders of this society feel that while we have in our city a splendid organization for the discussion of strictly technical questions, yet there is a want of something, a social and professional centre, where we can meet together and dine together in a friendly and social way, and where we can discuss intelligently matters affecting our profession which do not come within the purview of any section or existing society, where we can listen with profit and pleasure to addresses by gentlemen who may or may not be members of our profession, and where we may be interested and instructed by them in subjects which lie in the borderland between the profession and the public, or which are in the land of pure literature, a land into which we as busy practitioners make rare excursions.

The intensity of the interest we concentrate in our onerous and responsible life-work debars us to some extent from the cultivation of letters, from the discussion of literature, from association with those who make law or literature an occupation, and with those who make the laws which govern our professional and personal interests. We doctors live too much alone. Our work is done alone. Our patients are our principal associates. We live largely with the sick and morbid. Hence we are liable to grow too introspective and sometimes morbid. Such a club as ours should prove to be an antidote. It should also tend to remove misunderstandings and misappreciations from among us. The doctor's isolation breeds envy, jealousy and misunderstanding. We are too apt to draw unfavorable inferences from the superficial observation of a professional brother. We notice his walk, his house, his carriage, dress and expression, and we form erroneous impressions about him. But when we meet him socially and feel the grasp of his hand, the sound of his voice, and ascertain the trend of his mind, the soundness of his judgment, when we talk over the events of the day or the questions

of the hour and hear his laugh, we are able to form a true estimate of his character and to draw closer to him or to hold him in greater esteem. Much harm is done among us by the unwise and often untruthful remarks of patients, especially those made by those who owe us gratitude and an unpaid bill, for there is no hater like the man who is under an obligation. Every sight of his benefactor is to such a man a reproach, and he forthwith girds himself to do him an injury. Ashamed to injure openly, he discovers that the easiest and safest way to hurt him is to misrepresent him to a brother practitioner. "'Tis pity; 'tis true, 'tis true, 'tis pity.'" Let us take the ill said of a brother with the proverbial grain of salt. We may be wrong in our judgment of him and he may err with regard to ourselves.

But enough of moralizing. As Alice tells us:

"The time has come, the walrus said,
To talk of many things,
Of shoes and ships and sealing wax,
Of cabbages and kings."

But while we talk of cabbages and kings we must not forget our patron saint Aesculapius. A legendary being, half god, half man, and closely related to the best families among the gods. It is surprising that so highly connected a gentleman should have condescended to become a doctor, and a general practitioner at that. Perhaps he was not called upon to make physical examinations in those days. We are told that his fees were voluntary gifts. I wonder what his income was? I wonder if all the available corners in Athens were occupied by a doctor and if the university turned out a big grist of M.D.'s every spring? If the medical council examinations were easy or whether the university conferred its own license? Whether the graduates were cooped up in a province of Greece or whether they had national registration? The chief complaint I have against Aesculapius is that he was the father of Hygeia, and hence the step-father of the sanitarians, those gentlemen who from the purest motives and with the best of salaries cut down our business.

We live by disease, which is brought about by conditions of filth and contagion, yet we advise the public to avoid that which brings us bread and butter. Have you ever noticed advertisements put forward by the whiskey men advising the public to beware of drink? Have you seen the advertisements of the tobacco trust warning the public against the use of tobacco? I have not. We are certainly the most unselfish of all God's creatures here below, and we deserve lyres and little golden crowns in the not remote future. It is well for the world, if not for us, that Aesculapius arrived in this vale of tears by the

Caesarean section, for otherwise he would not have arrived at all and the hygienists would have had no existence and no salaries.

We are distinguished among the sons of men by our simplicity and the entire absence of the commercial instinct. Every member of a hospital staff gives at least fifty per cent. of his life work free, gratis and for nothing to the public. Our reward consists of a few suits for malpractice put up by hospital free patients with the gleeful assistance of some enterprising and speculative young lawyer, and in premature old age from overwork, if indeed we do not die from blood poisoning in the meantime. Hospital patients cannot be made to believe that we work for nothing, yet we are held responsible because the hospital board of trustees deny all responsibility. Every hospital surgeon takes his professional life in his hand every time he operates on a free patient. How long is the profession going to bear the burden of hospital work without remuneration? On the continent of Europe the payment of the attendant staff by the State or by the municipality is universal, and even in England the hospital boards are now paying honoraria to the attending staff. It is to be hoped that the Governors of our new two million dollar hospital who are providing so generously for the public have not forgotten to provide for the payment of the medical and surgical staff.

It is our good fortune to have with us to-night as our guest an eminent judge. We welcome him for his own sake and as a representative of the great profession of law. We are accustomed to lay down the law. But our judgments have not the weight of those delivered by the bench. Our client accepts our decisions or not as he chooses. No doubt many of those receiving court sentences would like to be able to exercise their own choice. The judgments of a court are subject to appeal to a higher court. Our clients revise our judgments and often pay for their temerity by appearing at the Highest Court.

We have had in Ontario at least one eminent man who practised both law and medicine, the Hon. Dr. Rolph. The elaboration and multiplication of laws and the refinements of modern medicine would render it difficult to do this now. It would puzzle an acrobat to practise both law and medicine to-day, for while he was jumping the amendments to the Municipal Act he might at the same time be called upon to put in practice the opsonic theory or to decide whether his patient was suffering from the ill effects of the streptococcus or the staphylococcus.

Our present connection with the majesty is either through the interesting relations of the medical student and the police officer or through those eminent gentlemen, the coroners, who

expound the law and do post mortems equally well. Their reading is wide, from Tait on Tapeworms to Byles on Bills. Is it to be wondered at that among coroners are to be found the brightest ornaments of the profession?

The field of literature has also been cultivated by medical men. We have had a long line of writers in general literature from Smollett to Conan Doyle. Each has in his own way adorned both literature and medicine. Smollett is not much read nowadays. Since the publication of "Three Weeks" he is not considered sufficiently stimulating. Of medical litterateurs, Oliver Wendell Holmes is *facile princeps*. His Autocrat and his Poet At the Breakfast Table have charmed and delighted two generations. Nothing in the language compares with its quaint humor, its shrewd common sense, and its varied knowledge of human nature. Wier Mitchell has a large circle of admirers and readers of his delightful stories. That great, big-hearted general practitioner of medicine and worthy knight of the pen, Sir Conan Doyle, has created the imperishable character, Sherlock Holmes. Modelled on the great Edinburgh surgeon, Joseph Bell, Sherlock Holmes' thrilling career of adventure has been followed with breathless interest by a host of readers in many languages the world over. Great was the rejoicing when it was discovered that he was really not dead, but only in hiding, for the character is so well drawn that he appears like a living personality. Our own William Osler has been doing a little general literature notwithstanding his sixty years. If he is not shortly anesthetized we may hope for more and equally charming sketches from his graceful and facile pen. Last, but not least, let us reverently and lovingly recall to mind the sweet singer of the Habitant, William Henry Drummond. Take him for all in all he was a man. Genial, whole-souled, the creator of a new phase of poetry, his memory will live long in the hearts and minds of his countrymen. Of him it can be said, as of Ole Docteur Fiset:

"Let her rain or snow, all he want to know
Is jus' if anywan's feelin' sick,
For Dr. Fiset's de ole fashion kin',
Doin' good was de only ting on hees min',
So he got no use for politique.

"But it's the sam', alway, lak' dat ev'ry day,
He never spare hese'f pour nos autres,
He don't mak' moche monee, Docteur Fiset,
An' offen de only ting he was get
Is de prayer of poor man, an' wan bag of oat."

Finally, let me say that this Club is a society of friends. "All men," said Socrates, "have different objects of ambition, horses, dogs, money, honors, as the case may be, but for my part I would rather have a good friend than all put together." "As to the value of other things," says Cicero, "most men differ; concerning friendship, all have the same opinion. What can be more foolish when men are possessed of great influence by their power, wealth and resources to procure other things which are to be bought with money, horses, slaves, rich apparel, costly vases, and not procure friends, the fairest and most valuable furniture of life."

In the choice of the members of this Club we have exercised the greatest care so that all shall be congenial and that we shall dwell together in harmony. It is human to err, so let us bear in mind the advice of Marcus Aurelius, "When thou wishest to delight thyself, think of the virtues of those who live with thee, for instance, the activity of one, the modesty of another, the liberality of a third, and some other good quality of a fourth. For nothing delights so much as the example of the virtues, when they are exhibited in the morals of those who live with us. Wherefore we must keep them before us."

We are members of a great and noble profession. We are honestly and unselfishly striving for the advancement of science and for protection of the health of our fellow-citizens. Let us always bear in mind that in so doing we are working for Canada, the land in which we live, the land of a great present and of a greater future, the land of the snow and the sunshine, the land of flowers and of fruit, the land which to us is home. Can we not say with the Canadian poet, Roberts:

"O strong hearts guarding the birthright of our glory,
 Worth your best blood this heritage that ye guard,
 Those mighty streams resplendent with our story,
 These iron coasts by rage of sea unjarred—
 What fields of peace these bulwarks well secure?
 What vales of plenty those calm floods supply?
 Shall not our love this rough, sweet land make sure,
 Her bounds preserve inviolate, though we die.
 O strong hearts of the North,
 Let flame your loyalty forth,
 And put the craven and base to an open shame
 Till earth shall know the Child of Nations by her Name."

POST-GRADUATE STUDY IN EDINBURGH.

BY E. NEWTON DRIER, M.D., F.R.C.S. (Ed.),
Vancouver, B.C.

Few medical centres have special facilities for post-graduate study, and the busy practitioner, who has only at the most a few weeks for recreation and study, finds that much of his time is lost. In most schools the clinical work occupies only a part of the day; the remainder must be occupied in some other way. If the city offers many attractions, natural, historical or otherwise, then so much the better, as the idle hours may be more pleasantly whiled away.

It is not the purpose of this paper to compare the facilities in Edinburgh with those of other European cities, but to endeavor to show what the visitor may expect in Edinburgh. This famous school, like many others, devotes most of its time to the undergraduate, and a few weeks only, during the summer vacation, to post-graduate instruction.

During the past summer a course was given from August 30th to September 25th, comprising:

1st. A general course, fee \$25.00.

2nd. A surgical course, including Operative Surgery, Surgical Pathology, Surgical Anatomy, Surgical X-rays, fee \$50.00 for entire course.

3rd. Special classes, fee \$5.00 each, in the following subjects: Bacteriology, Blood, Ear and Throat, Ophthalmoscopy, Gynecology, Histology, X-rays, Errors of Refraction.

The clinics were given by the staffs of the Royal Infirmary and Royal Hospital for Sick Children. Of special interest are those by Mr. Stiles, Surgeon to Children's Hospital; Byron Bramwell, of the Royal Infirmary, on Neurology; Dr. Norman Walker, on Dermatology; Drs. G. McKay and W. G. Syme, on the Eye; Stewart Fowler, on Infant Feeding, and Major Marshall, on Tropical Medicine. Messrs. Thomson and Miles gave an excellent course on Operative Surgery; Mr. Henry Wade a popular course on Surgical Pathology, using the museum of the Royal College of Surgeons for purposes of instruction. A very interesting course is given by Dr. Dawson Turner on X-rays, radium, and treatment by Ions.

These courses are very popular, as judged by the fact that they are filled weeks before starting. Among those taking them last year were twelve Americans. In addition to these courses

a series of classes were held throughout August, upon methods of diagnosis.

Post-graduate study in Edinburgh is still in its infancy, but even so is better in the writer's opinion than in most English-speaking countries. New interest is being aroused in the post-graduate and new efforts are being made for his benefit. To this end Dr. G. A. Gibson has interested some of his friends and already has several thousand pounds sterling for the equipment of a laboratory for post-graduate men. Full information concerning these courses may be obtained by writing Mr. John Stirton, Secretary Post-Graduate Course, University Buildings, Edinburgh.

In addition to these special post-graduate courses, during August and September, the practitioner may attend for a nominal charge (ten dollars for three months) any of the numerous daily, operating, ward, and theatre clinics, as well as the large out-patient department of the Royal Infirmary (900 beds), the largest in Great Britain; and also the Royal Hospital for Sick Children (ten dollars for three months). In the afternoons the pathological museums of Edinburgh University and the Royal College of Surgeons are free from two to four. They are well catalogued and arranged, and contain many specimens, old and historical, as well as more recent. The visitor should not fail to spend some time here daily throughout his stay. Anatomical material may be had for a small fee, and special work followed in the laboratories, so that no part of the time need be wasted.

As a medical and educational centre Edinburgh needs no words of praise from the writer. As a maker of great men she is the peeress of them all. One has only to think of Burns, Scott, Stevenson, Carlyle, Darwin, Syme, Simpson, Lister, Macewen, and a score of younger men who have already become famous as teachers in medicine and surgery. We have in Edinburgh now such men as Stiles, a brilliant operator, a sound teacher, and a genial good fellow. He is recognized as an authority on the breast, and produces a valuable translation of Kocher's famous work on surgery. Mr. Alexis Thomson, in association with Mr. Miles, has written one of the most valued text-books on surgery in the English language or any other. His communication on Neurofibromatosis should be in every surgeon's library. He is an able operator and teacher and well deserving of the post to which he has so recently risen—that resigned through ill-health by the much-beloved and famous Professor Chiene. It has been said of the latter that he was one of the men who could make the "indelible impression." There

are many in Edinburgh University who are doing this in the present as others have in the past. The work of Professor Caird is much admired, and his teaching typical of the canny Scot whose work is based at every step on sound anatomical and surgical principles, lacking much that is evident in some more faddy and less careful thinkers of other cities. Sound, practical, thorough teaching has always been the predominant feature of Scottish universities, and Edinburgh is no exception.

In medicine all are familiar with Byrom Bramwell's "Clinical Studies." He is too well known as an able teacher to be praised in this place. As another instance of the canny Scot, we have the original of Sherlock Holmes, in Prof. Bell of the Royal College. His pupil, Conan Doyle, has perhaps not greatly overdrawn the hero of his famous stories.

The writer owes a debt of gratitude for the valued instruction by Mr. Wallace of the Royal Infirmary. Mr. Cotterill is without a peer as a ward clinician, and proof of this is shown by the crowded chairs and breathless attention during one of his ward clinics. Space will not permit mentioning all the good teachers of Edinburgh, but we must not close without referring to Dr. Gibson, one of the instructors of internal medicine, and well known as an editor and author of several valuable works. He is the post-graduates' friend and is beloved by his undergraduates and confreres.

Edinburgh offers many attractions for our hours of play. Historical interest attaches to almost every house. As in the making of great men, so in the making of history, this grand old city has no equal. From ancient Holyrood, the castles, the ruined abbeys, the old Chapel of Queen Margaret, and hundreds of other places of interest, one learns the lessons of the glorious past. Many visits may be made to places of great interest in the immediate vicinity, such as Melrose Abbey; Abbotsford, the home of Sir Walter Scott; Roslin Chapel, the most richly carved and most beautiful of the ancient chapels in Europe; St. Andrew's, with its famous university, golf links, ruins of a grand old abbey, and the ruined castle, with its famous "bottle dungeon."

Months may be spent in visiting these scenes of intense historical interest without becoming wearied. Prince's Street in Edinburgh is acknowledged to be the most beautiful street in the world. So that from an aesthetic as well as from an educational and historical standpoint the subject of our discourse, *grand old Edinburgh*, surely offers sufficient inducements to tempt us to begin our European visit in this famous and delightful city.

Selected Articles.

OBSTETRICS, GYNECOLOGY, AND ABDOMINAL SURGERY.*

BY ADAM H. WRIGHT, B.A., M.D., M.R.C.S. (ENG.), TORONTO,
CANADA.

Professor of Obstetrics, University of Toronto.

Obstetrics as a science and art has a fairly definite entity, and includes the management of pregnancy, labor, and the puerperal state. Gynecology cannot be so easily defined, because many gynecologists practise also abdominal surgery. The tendency in certain quarters is to include abdominal and pelvic surgery under general surgery, and, it may be, that the pure gynecologist will soon pass out of existence. In any case, however, those who pay special attention to midwifery and diseases of women will always take a deep interest in abdominal surgery, which is accomplishing brilliant results.

The whole world is at present much interested in acute "septic peritonitis." Many of you will remember a paper on that subject by Dr. James F. W. Ross, two years ago, at Montreal; many of you will also remember another paper read by Dr. George Bingham, last year, at the meeting of the Saskatchewan Medical Association. Dr. Deaver, of Philadelphia, read a paper on the same subject at the last meeting of the Ontario Medical Association held in Toronto June 7 of this year. The opinions expressed by Dr. Bingham and others who took part in the discussion will form the text for a few remarks in this paper. One of the interesting features was the marked differences in the opinions expressed. To speak briefly, there were practically two groups. Those in one party recommended small incisions, no irrigation, free drainage, Fowler's position, no administration of opium. The others recommended large incisions, thorough irrigation, no drainage (complete closure), recumbent posture, deep narcotism.

Let us consider the matter from the standpoint of the obstetrician, the gynecologist, and the general practitioner. Why are the differences in opinion so marked? Which set of men are

* Opening address at the Section in Obstetrics and Gynecology, delivered at the meeting of the Canadian Medical Association, Winnipeg, August 23, 1909.

right, and which are wrong? We have to say in this connection that many of the discussions on this and cognate subjects that have taken place in recent years have been neither temperate nor dignified; and the Toronto discussion was no better than the average in that regard.

One should suppose that the results obtained would aid us much in reaching a decision. Both parties, however, claim success, and report a large percentage of recoveries. Under such circumstances it would seem fair to conclude that both parties are right in part at least. If the exponents of the two widely different methods consulted and discussed matters in a friendly way, it seems probable that they might learn much from each other. It seems unfortunate that the champions on one side so frequently endeavor to prove that those on the other side are entirely wrong.

In commenting on the points raised and the opinions expressed I shall refer chiefly to irrigation, drainage, the position of the patient, and the administration of morphine. No special reference will be made to elimination, administration of hot salt solutions, silver solutions, calomel, strychnine, sera, etc., although they are, of course, very important.

Irrigation.—One can say, probably, without fear of contradiction, that irrigation has to some extent gone out of fashion. Many surgeons do not now wash out an empyema. Many gynecologists do not now wash out a pelvic abscess. Where there is free drainage in such cases irrigation is not required. From this point of view it seems fair to assume that, if we could have free drainage in cases of peritonitis, irrigation would not be required, and therefore should not be done. From another point of view, it seems at least equally fair to assume that drainage is not always required, because a large proportion of patients recover after irrigation without drainage. Such being the case, we surely must admit that thorough irrigation, as carried out by Ross and others, is beneficial in some cases at least. Would it not be better, then, to try to discover why and when it is beneficial instead of endeavoring to prove that it is always wrong?

A certain well-known surgeon of Toronto published a report of a case of general septic peritonitis, following perforation of the bowel in typhoid fever, in which the patient's life was saved by operation seven years ago. It seems somewhat remarkable that while in that case he "flushed out the peritoneal cavity with hot salt solution," with apparently good effect, he should now conclude that such irrigation is never justifiable.

It will, of course, be admitted that the layer of endothelial cells lining the peritoneum is very important as a defence against the entrance of septic organisms, and that injury or destruction of these cells is dangerous in a high degree. Do the men who (quite correctly) attach so much importance to this fact, think a hot salt solution in itself will destroy, or even injure these cells? Surely it has been demonstrated that it will not.

It is presumed that irrigation is decidedly dangerous in certain cases of more or less circumscribed septic peritonitis because of the possibility, or probability, of disseminating the poison. This is true especially in certain cases of appendicitis, a fact which even the most ardent irrigationists are rapidly learning.

Drainage.—The present methods of promoting free drainage from the peritoneal cavity are a wondrous improvement on those employed a few years ago. The evidence as to the remarkably good results following these improved methods is so strong that we can scarcely refuse to accept it. The good effects of the Fowler position in connection therewith are generally recognized. Large tubes are introduced into the lower part of the abdomen and drainage through these is assisted by the sitting position of the patient.

The methods employed are not yet perfect, however, and the results of drainage in some cases are sadly disappointing. Such being the case, is it not reasonable to suppose that irrigation before drainage might sometimes be beneficial? Take, for instance, perforation of the stomach or bowel, with sudden out-pour of septic matter sometimes in large amounts. Let us ask those who favor drainage alone why they think that any attempt to wash out some of this deleterious matter is always harmful? The answer is that some surgeons in Toronto and other places have got better results from drainage alone. Supposing that to be true, is it not well to consider it possible that careful irrigation before drainage may accomplish good in some cases? We need not now consider the objections raised to drainage in septic peritonitis because of discomforts to the patients, prolonged recovery, dangers from new wounds, etc., although we may acknowledge that such objections are legitimate.

The importance of drainage has always been appreciated by the obstetrician. Drainage from the uterus after labor has always been more or less encouraged; but the advantages of the recumbent posture have been overestimated; and the drainage has often been faulty where free discharges from the uterus and vagina were urgently needed. For several years the tendency has been to lose our high respect for the flat on the back position,

and give our patients greater freedom as to their movements in bed.

Fowler's Position.—The object of placing a patient suffering from septic peritonitis in the semi-sitting position is to cause the exudates to gravitate from the dangerous upper zone to the safer lower zone in the pelvic region. It is somewhat surprising to find a gynecologist, who has had large experience in the treatment of pus collections in the pelvis, make the statement that all zones are equally bad. Surely it has been demonstrated that a subphrenic abscess is ten times over more dangerous than a collection of pus in the lowest portion of the peritoneal cavity.

Let us consider the effects of drainage from the uterus in cases of puerperal saprophytic infection. Clinically we find a foul discharge from the uterus due to decomposition of dead tissues such as portions of placenta and membranes. For many years it has been deemed important to clear out the decomposing debris from the uterine cavity. In connection therewith curettage and irrigation have been more or less popular. Many now think that the dangers connected with these procedures are serious. As before mentioned, we rely greatly on drainage. Many of us thought that we might use Fowler's position with much benefit. As a consequence our custom now is to place the patient in the sitting position when the discharges become offensive. Fortunately, if we can place the patient in the proper position, no complications such as occur in septic peritonitis, will prevent drainage.

It unfortunately happens that Fowler's position is so uncomfortable as to become impossible for some patients. Without discussing the various modifications of the position, I may say that I prefer the method employed by Miss Lash in her Cottage Hospital, Toronto. The head of the bed is elevated fifteen to twenty inches. The patient is allowed to bear part of the weight of her body on the feet, which are implanted on a pillow or cushion resting on the foot of the bed. If the patient gets tired she is fastened to the headboard in the ordinary way; in some cases she is fastened to the headboard in such a way as to give partial support while she bears part of the weight of her body on her feet. It will be noticed that in these two modifications the patient is lying on her back instead of sitting or half sitting up, and, as a rule, she is perfectly comfortable. In several cases of sapremia occurring in Toronto, drainage by this position, and eliminative treatment by the administration of calomel and Epsom salts, without any intrauterine douching or scraping, have cured the patients.

The Administration of Morphine.—The history of this old drug is interesting. It has probably been blessed and cursed to a greater extent than any other drug in the pharmacopeia. Smellie, in discussing shock occurring in certain obstetrical emergencies, including hemorrhages during pregnancy, one hundred and fifty years ago, said: "Above all things opium must be administered to procure rest." Forty to fifty years ago Alonzo Clark and Fordyce Barker, of New York, two of the ablest and most conscientious clinicians that this continent has produced, treated and cured patients suffering from septic peritonitis by the administration of very large doses of opium or morphine. About twenty-two years ago Lawson Tait objected absolutely to the use of opium in large or small doses. The general adoption of his views, especially on this continent, was remarkable, and the ardor of some of his disciples was almost sublime. In the year 1890 a discussion took place in a medical society, composed of specialists, in the United States, on the surgical conception of peritonitis. One of the debaters designated a man who administered opium as an opium idiot. Another referred to Dr. Clark's "opium habit," and the "follies and evils of his teaching," in a most contemptuous manner. Let us not imitate these methods of discussion in this association.

We are told that morphine masks symptoms, causes intestinal paresis and limits leucocytosis. Such statements are worthy of careful consideration, but cannot now be discussed in detail. Allow me, however, to make a few observations from the other side. Morphine, by relieving pain in the early stages of peritonitis, may throw the careless observer off his guard, but will not hide the symptoms from the careful clinician. However, it will answer our purpose at present to say: If you fear this "masking," wait until you have made your diagnosis before administering morphine. Morphine retards to some extent the action of the bowels; but many of us think that it does not cause paresis, or even constipation, which cannot be overcome by cathartics. Sepsis alone causes incurable paresis. Many of us do not think that morphine limits leucocytosis in septic conditions. In fact we think it often aids that process.

We all know that morphine is a dangerous medicine if not used with discretion. We are exceedingly loth to prescribe it for headache, neuralgia, dysmenorrhea, etc. We believe, however, that morphine is one of the best remedies for shock due to injury, and collapse due to hemorrhage. The surgeons who are now substituting morphine for strychnine in the treatment of these conditions are probably right.

When administering morphine in various obstetrical and gynecological emergencies we wish to stop pain. As to that I have frequently expressed the opinion during the last twenty years that it did not appear to me either scientific, practical, or humane, to withhold morphine from a woman suffering agony from intra-abdominal inflammation, because it may "mask symptoms." But morphine accomplishes something far more important than the mere relief of suffering. It produces that condition of repose and quietude of the nervous and circulatory systems which we desire above all things when the machinery within the body is going all wrong. It quiets those nerve centres, which, like so many specks of dynamite, are causing a vicious circle of explosions within the body in cases of toxemia and septic inflammation. To produce such effects, *i.e.*, to paralyze the superactive nerve centres that are doing the mischief, large doses are required. One-eighth or one-quarter of a grain of morphine, even when given hypodermically, will be quite useless for the conditions referred to in this paper. In fact such doses sometimes do more harm than good.

Bingham told you at Regina that "if one were restricted to one single measure in the treatment of spreading sepsis it would appear that rest would be the paramount remedy." Ross told you at Montreal that he obtains rest by the administration of opium. Let me quote from his paper: "In all cases of acute general septic peritonitis, after operation I use *opium in very large quantities until the respirations are reduced to about ten per minute.*" One important point here is that the majority of surgeons who object to opium never gave these large doses, never saw anybody else give them, and think the method so absurd as to be unworthy of investigation or consideration. I hope I may be pardoned for saying that such men are not qualified to discuss intelligently the "opium treatment."

Let us in conclusion reconsider some of the main points at issue, recapitulate to some extent, and choose the best from the good work done by men who differ materially in their opinions and methods.

Irrigation is useful in so far as it washes out cavities containing putrid or septic matter, but it causes more or less shock, especially in peritoneal and uterine cavities. Let us endeavor to ascertain, when it is advisable, how it can be carried out most safely, and how its evil effects can be best counteracted.

Drainage is useful in its place. We all appreciate that fact. Let us still study the subject, and endeavor to learn the best methods of procedure. Would it not be better, however, to

combine irrigation with drainage in cases of rupture of the stomach and bowel?

Fowler's position is satisfactory to most of those who have adopted it as a good method of promoting drainage; but we should employ means to make it effective, and, at the same time make the patient comfortable.

If morphine is a good medicine for shock, would it not be well, as a matter of routine, to administer it after every irrigation of the uterine and peritoneal cavities, after every difficult labor, and after every difficult operation?

And now a few words of a personal nature. I thank the officers of the Association for the honor conferred on me through the invitation to deliver the address in this section. I have referred to points of great interest to both general practitioners and specialists. I have spoken about the opinions of some surgeons (not as a rule giving names) of my own city with a certain amount of frankness, because they are personal friends who are not likely to misunderstand me. I do not pretend to speak with any authority. I am not a master among my fellows. I am a student only. My opinions on some points are not definite, while those on other points are quite decided. I am continuously looking for new light on all things, however, and I feel that my views of to-day may be changed to-morrow. I should like to see friendship and good-will existing between the members of our profession. May we endeavor to sink self, work together, and learn from each other. Let us be a united body, charitable, tolerant, and broad. If we act on these lines we should make our profession grand in the highest sense of the word, and we shall be doing our duty to our fellow-creatures, and to our God.—*New York Medical Journal*.

30 East Gerrard Street.

RADIUM AS A SPECIFIC IN GIANT CELL SARCOMA.*

BY ROBERT ABBE, M.D., NEW YORK.

A sense of justice to a new subject has led me, from time to time, to present to this Society unusual cases of disease under the treatment of radium, so that fair judgment may be formed of the condition before, during, and after treatment. In that spirit also I would present for discussion some evidences of its intrinsic value in one group of cases representing a disease which permits of exact study, namely giant cell sarcoma, and demonstrates a specific action which has not been elsewhere spoken of.

CASE I.—In January, 1904, a lad of 17 years came to me with a soft tumor of his left lower jaw, of rapid growth, for it had been noticed only two months, and was thought by him to be an inflamed tooth. At that time, nearly six years since, I showed him at this society, with the desire that we should watch the change of the growth, as I hoped radium would affect it. The left lower jaw showed a soft tumor bulging the chin and lip forward, with the canine and two incisor teeth, which were loosely imbedded in it. Under the tongue the growth projected on the floor of the mouth, and rose half way up the teeth, where it had a fungating ulcerated area, purple and bleeding. The palpation by a finger within and without the growth was almost as soft as fluid. The bone had been wholly absorbed except a narrow strip on its lower margin which held the jaw ends together. There were two enlarged lymphatics beneath the angle of the jaw along the carotid. The growth was the size of a large English walnut.

Without previous experience with radium in this form of tumor, or with any recorded case in literature, I ventured an experiment with the inside growth by pressing a glass tube against it, with 150 milligrams strongest Curie radium (300,000). This I repeated for from twenty minutes to one hour for eight days. Then I saw a shrinkage of the mass, and of the fungous ulcer, which became pink and small. On the fortieth day the ulcer was healed and the inner side of the tumor hard and flat.

At four weeks the shrinking was progressing. Then I passed a knife into the tumor between the gum and lip. It entered as if the tumor were soft mush. It bled heavily, and I slipped the

* Read at a meeting of the Practitioners' Society, December 3, 1909.

glass radium tube into the midst of it. On twelve occasions afterwards this tube was left in the tumor for two or three hours each.

At six weeks the tumor still measured three centimeters thick, $2\frac{1}{2}$ vertically and 5 cm. along the bone, but was shrinking. At each treatment the knife cut tougher tissue and gave less bleeding. At six weeks ossification had begun throughout the tumor, as felt by gritty points as the knife cut it.

At the tenth to twelfth week a sharp radium reaction set in, which caused me some alarm. The hot skin was fixed to the area of the tumor by cellulitis, which was only controlled by lead and opium lotion, but in a week this was gone.

All treatment was stopped from that day. The teeth became solidly fixed in place. The soft growth rapidly ossified throughout. Then the ossific tumor shrank. The strangest thing of all is that each year has seen a continued reduction in the bone, so that now the jaw seems normal except that it is slightly thicker than on the opposite side.

It will be proper here to note this extraordinary retrograde of the tumor tissue, which is not at all like a destruction by caustics, but an effect of specific radiumization alone.

CASE IV.—Epulis, Giant Cell. Dr. R. observed a red, spongy growth on his upper gum between the incisor and canine. It bled at touch. His dentist cut it away and applied the galvanic cautery. In three weeks it reformed. Then it was excised, under cocaine, as far into the gum as possible. It was now more vascular and bled at the slightest touch. The microscopic diagnosis by Dr. Wood was epulis with giant cells. Examination showed a spongy, red growth, showing in front and behind on the gum between the teeth, about the size of a pea. Sucking or the use of a tooth brush caused bleeding.

In June, 1907, I applied 20 mgr. pure radium bromide to the growth, for ten minutes, twice.

In November, five months later, it was normal inside, and a little pink spot showed on the outside. Again I applied the same radium fifteen minutes, and some weeks afterwards another fifteen minutes, which rendered the gum normal. After two and a half years the part is still normal.

CASE XI.—Giant Cell Sarcoma of the Sternum. A man of 59 years had a growing tumor of the breast bone for one year, though he had pain prior to that. It hurt him on jarring, so that he had to give up golf and move slowly. His physician gave him large doses of iodide of potassium, which produced no change.

In June, 1909, he was brought to me by Dr. Newton of Montclair. I found a large, expanding tumor four inches wide by six long, from the top of the sternum downward. It was soft, elastic and crackled in a small part of its surface under finger pressure, though two-thirds of its surface was soft.

I made a slight cut in the skin at two places and applied a small steel cylinder with saw-teeth edge, with which I punched out a cylinder of the tumor. The instrument went through the fibrous capsule, replacing the bone, and sank toward the sternum three inches before reaching the inner wall. Thus the sternum had been expanded by the rapidly growing sarcoma from a normal half-inch to three inches thick, and all bone was wanting except some trifling surface pieces, like eggshell.

Into those punched-out holes, and others made later, I sank several strong radium tubes and left them *in situ*, on three occasions, total 28 hours, in June. The pathological report was Giant Cell Sarcoma. At each withdrawal of the punch blood spouted out almost as if from an aneurysm.

I did not see the patient from June to October—four months. He had had a good summer. The tumors were reduced in size, and had a uniformly harder surface and no crackling. Again I punched this growth to introduce my radium and found it paler, firmer, and bleeding but little. The depth was now two inches where it had been three. The deep aspect of the tumor wall was also harder, as in front.

In October I gave it, by design, a very severe radiumization. At three points introduced a tube of 100 mgr. (300,000, Curie), and two of 20 mgr. pure German, each. These I left *in situ* 53 hours; (the longest exposure I had ever ventured) and advised no more treatment for six months.

Six weeks have passed, and we see to-night a flattening of the lower half, almost normal, and a slight dermatitis which has come from the outward radiations, to the under side of the skin.

If one may predict, we may expect to see a subsidence progress throughout the mass, with ossification and final shrinkage to normal in a few months without further treatment.

This review of a group of cases of one type of malignant cell growth, all showing peculiar, I may say unique, retrograde changes, tending always to return to the normal, gives a demonstration of the efficacy of radium, as clear to the clinical student as a demonstration of Euclid on a classroom blackboard.

* * * * *

We have, then, to face a pathological and surgical problem which needs explanation. Why should an overgrown mass of a

certain group of cells of the body, like these marrow cells, grow riotously and constitute a tumor which absorbs healthy structures opposing its expansion and destroy the body in a manner justifying its name "malignant?" And, again, when the powerful Becquerel rays emitted from radium penetrate the mass, why should the retrograde of all malignant cells proceed with orderly retreat, until the tumor has entirely gone? Or, again, how shall we explain the reassembling of original cells out of the mass, so as to shape the parts like the jaw bone, the roof of the mouth, the humerus, etc., so that the appearance and function are restored?

It is a bold speculation that permits one to venture in this field of biology when master minds admit ignorance of what constitutes the vital force which energizes each cell, and constitutes life as a whole. Yet we may be permitted to suggest that there are already known definite facts as to the nature of the rays, that they are electrons emitted with tremendous force, traveling in straight undeviating lines, each carrying an electric charge, if, indeed, they are not themselves electricity; speeding at 70,000 miles a second; retarded by dense objects, like masses of lead or steel, or bone or stone, only to escape beyond and resume their travels into space. It is recognized that radioactivity exists everywhere, but it is only when we concentrate it in our powerful little tubes that we can study definite effects.

The alpha, beta, and gamma rays have different electric charges, and different effects. The alpha are suppressed entirely in the glass tube.

The beta, carrying negative currents, escape feebly, and the gamma, carrying its own electricity, penetrate everything. Is it not conceivable that the riotous overgrowth of cells constituting a tumor may be due to a loss of equilibrium in the balance of electric forces sustaining the normal cell growth, and that the supply of one needed element—possibly positive electricity, possibly negative—will restore the balance, and enable the cells to resume their orderly growth.

This theory may encourage us to think further in that field, but it is purely "audacious and speculative," as Crookes says.

Huxley said "theories help us to bear our ignorance of facts," but conversely we may say *facts are the foundation of theories.*

The surgical estimate of giant cell sarcoma is one of a varied degree of malignancy. Wide removal of the apparent disease is undoubtedly more often curative than in other types of actively growing tumors.

The summary of operative results given in a paper read before this society four years ago by Dr. McCosh (*Annals of Surgery*, August, 1904) admirably showed the relative virulence and results to be expected. He rightly says that malignancy cannot be judged from the pathological report, as tumors of apparently similar structure vary. Of a number of operations on giant cell tumors, he cites cases of lower jaw in which he excised half the lower jaw in two, and one-third in another. In the upper jaw he excised half the jaw once. He advises resection in long bones only when the growth is well encapsulated, but thinks amputation better in nearly all cases. In two cases of sarcoma of the thigh of this type he disarticulated at the hip. In two of the leg, he amputated in the mid-thigh. This reflects the general consensus of opinion on the operative attitude of surgery.

In the group of cases just narrated it would have been necessary to resect one-third or one-half of the lower jaw in three, and half the upper jaw in two, while the case of the boy with involvement of both upper jaws would have been hopeless.

The more grave case also of the extension and highly vascular sternal tumor would have given the patient a fatal hemorrhage if any attempt had been made to remove it, and it, at the best, could not have been extirpated entirely.

My conviction is that every case of myeloid sarcoma should be given treatment by radium before any operation, and that we may expect many cures.—*Medical Record*.

VARICOCELE.*

By D'ARCY POWER, F.R.C.S.,
Surgeon to St. Bartholomew's Hospital.

When you have to do the operation, just remember some details about it. First of all, you prepare the patient in such a way that no irritation of the skin is caused; you must bear in mind all the time that the skin here is very delicate, and you must not set up eczema or dermatitis by your preliminary treatment. I would rather the patient were washed on the operating-table with ether soap and biniodide lotion, and at once proceed to operate, rather than prepare the skin overnight, and pack him up, with the subsequent risk of chafing. You want a good assistant, who should devote himself to nothing except keeping the vas deferens away from the vessels which you are going to tie. He has enough to do if he holds the scrotum up with the index fingers and thumbs of his two hands, and is sure he has got the pampiniform plexus just underneath the skin, and that the vas is below his fingers. He makes the skin quite tense, and when he has done that, you incise between the two fingers, *i.e.*, $1\frac{1}{2}$ inches. Cut down through skin, and then through fascia, three or four or five layers, as the case may be, until you come down to the veins themselves. The mistake is to try to pass the needle under the pampiniform plexus before you come down to it. This plexus lies in several layers of fascia, and you must divide each if you are going to get the best results; go right down until the veins shine out as black things; and even then there is another layer of fascia which you can divide. So the essence of the operation is freeing and seeing the pampiniform plexus. And do not let your assistant move his fingers, otherwise the vas deferens will slip up, and you will almost certainly tie the vas with the veins. Remember that the veins lie packed together in little packets. Take an aneurysm needle, pass it beneath the packet of veins which you have freed. It is a proof that you have freed them sufficiently if you have to use no force to pass your aneurysm needle. If the needle will not pass freely underneath the veins, or if you have to cut down upon the end of it you have not divided all your fascia. Better it is to take your needle out again, take up your scalpel and forceps again, and go on cutting through the fascia until you can pass your needle readily, than

* Abstract of a lecture delivered at St. Bartholomew's Hospital, on Oct. 27th, 1909.

to force the aneurysm needle through tough fascia. When you pass your needle under the veins, you should be able to move it to-and-fro at least an inch, so that there is an inch of that plexus exposed in the wound. Pass a double ligature through the eye of the needle, withdraw your needle—and your ligature will be of catgut for choice; then tie the pampiniform plexus in two places, where you have freed it, that is to say, an inch apart. The parts are many, and you must get your knot tied into the veins, slowly, evenly and securely. When you have the ligatures tied, put a pair of pressure forceps above and below each. It happens to even the best of us that when we think we have securely tied a ligature, it slips off; therefore you must have your pressure forceps to pull upon the ends if this accident should happen. Cut out a piece of the veins between the two ligatures, generally about half an inch. You want to leave a fair piece of vein between the end of the ligature and the point where you divide; otherwise the ligature will certainly come off, and if it does, it is a disaster, as far as that particular case is concerned. There is certain to be much bleeding from the ends of the veins. A good varicocele operation is bloodless from beginning to end, and that is a very important factor in the subsequent repair. If you are at all careless or rough you are certain to have a hæmatoma. You have two ends of divided veins, and the first thing which strikes you when you divide them is: “I have certainly got that vas after all.” But it is not. When you look at the veins they are so thickened, and the walls are so thick that unless you cut sections and microscope them, you cannot tell the vas from veins. These thickened veins nearly always stand out. Take the two ends of the catgut ligature, and tie them together, so that you bring the ends of the veins into apposition. There must be a lump; you cannot help it. It is of no use trying to get them into exact apposition. Then bring the skin edges of the wound together; you need not trouble about the fasciæ, and be very careful that the skin edges are not turned in. The proper way to get them into apposition is for your assistant to let go the scrotum which he has been holding all this time, put a blunt hook on either side, and pull the ends tight. Then you can easily sew the edges. It is better not to use a continuous suture, use three or four interrupted sutures of fine catgut. If you get everything quite dry the subsequent dressing should be collodion and wool. In about seven or eight days’ time the patient can go out; there is no reason to keep him in bed after taking the stitches out.—*Medical Press and Circular*.

Progress of Medical Science.

MEDICINE.

IN CHARGE OF W. H. B. AIKINS, F. A. CLARKSON, AND BREFNEY
O'REILLY.

Treatment of Ankylosis with Fibrolysin.

The generally good results obtained from the use of fibrolysin led K. Knotz to try the drug in ankylosed joints secondary to rheumatic affections. The patients received no other treatment except hygienic and dietetic measures and warm sulphur baths, with, later, active and passive movements. Several patients felt slightly exhausted on the day of injection, but objective symptoms were not found. The single dose was 2.3 Cc. subcutaneously; in one case 6.9 Cc. and the following day 4.6 Cc. were given without untoward effects. The largest total amount was 117.3 Cc. One patient, aged thirteen, received 41.4 Cc., and another, aged seventy, received 20.7 Cc. Both were suffering from pronounced vitium cordis. The only disagreeable symptom resulting was a slight inflammatory reaction at the site of injection, which rapidly disappeared with moist dressings. The results in general were very good, especially where the ankylosis was due to the presence of extra-articular connective tissue. Less improvement was seen in the presence of pus and where the etiology of the joint condition was gonorrhea. It is also probable that with actual ossification little good will result from the use of fibrolysin.—*Med. Klinik.*

The Use of Skin Varnishes.

The practice of incorporating drugs to be used upon the skin dates from antiquity, and has been handed down from generation to generation, despite very obvious disadvantages. The treated parts must be covered with gauze and bandages, which absorb a large portion of the ointment and make the patient very uncomfortable, particularly during the summer. In addition, many salves have a tendency to become rancid, though the use of vaseline or lanoline as base is now quite general.

Many attempts have been made to incorporate the active drugs in some more convenient vehicle which would not soil the clothes or necessitate the use of expensive and cumbersome dressings. Powders may simply be dusted on the skin, but there

is no permanent effect or penetration. The same objection applies to suspensions in watery fluid, the so-called lotions. A more ideal menstruum is collodion or traumaticin, which will evaporate to a firm skin after applied, thus leaving the incorporated drug intimately in contact with the skin. There are, however, quite a number of disadvantages. Thus, both solutions will not readily adhere to moist surfaces, and, if once applied, cannot be easily removed before the upper layer of the epidermis has desquamated. The skin also cracks very easily where there is much flexion and extension, as over the elbows, and the free edge may irritate the skin still more.

Many drugs can be applied to the skin in alcoholic solution, or, better still, dissolved in tincture of benzoin. The large group of tars are best diluted with alcohol. Anthrasol, a purified tar preparation, can be applied as such, while tumenol, an excellent antipruritic, is dissolved in an equal part of alcohol, ether, and water.

According to Dr. Herman Klotz, one of the most easily applied and valuable drugs in dermatology is ichthyol. If applied upon the skin as 25 to 50 per cent. watery solution, it will rapidly dry to an elastic pellicle, which will not crack over the joints, and which can easily be washed off with soap and water when desired. There is absolutely no soiling of the clothes, and no dressing is necessary where drying is retarded owing to much secretion, as a layer of cotton or some indifferent dusting powder may be used.

Ichthyol, applied in this way, is useful in a large number of morbid conditions of the skin, particularly where there is an inflammatory reaction. Its use in erysipelas is too well known to require comment. Dermatitis due to drugs, particularly that resulting from contact with poison ivy, is certainly much more easily and efficiently treated by the ichthyol varnish than by the disagreeable and unhandy wet dressings still described in most text-books. Ichthyol is also indicated in burns of the first and second degree, and in chilblains, but burns of the third degree more properly belong to the surgeon. Among the acute exanthemata, smallpox and scarlet fever have been treated with ichthyol with the best results, and the non-toxic character of the drug allows it to be applied over large areas.

Many indications will be found for the use of the ichthyol varnish in skin diseases proper, where the process is chiefly an inflammatory one. In urticaria, the itching is controlled, though the actual cause of the condition will also require treatment. In eczema, on the other hand, ichthyol will actually cure, provided

the strength of the varnish be properly adjusted. The most suitable are the erythematous types, though the vesicular and papular subacute forms will also be benefited. Where there is much secretion it is best first to use an astringent, such as Burow's solution. In chronic eczema, ichthyol is of less service.

Dr. Charles T. Dade, of the Vanderbilt Clinic, has discovered that the action of chrysarobin may be mitigated by adding ichthyol. The usual chloroform solution of chrysarobin may be applied, to be followed by a 50 per cent. ichthyol solution. In this way no dermatitis will result and the linen will not be soiled. It is thus possible to apply chrysarobin to the scalp, perineum and other parts of the body, where its use was formerly contraindicated.

Other drugs which can be applied in the form of varnish are eugallol, dissolved in acetone, in place of pyrogallol, and euresol and colloidal sulphur. Solutions containing gelatine have not attained much popularity, with the exception of Unna's zinc gelatine, which is extensively used in the treatment of ulcers of the leg.

Eulatin in Pertussis.

The treatment of whooping-cough is usually directed either against (1) the causative micro-organism, (2) the catarrhal condition, or (3) the neurosis which is an element of the disease. Julius Baedeker (*Therap. Monats.*, September, 1909) finds that eulatin, a compound of amido-benzoic and bromo-benzoic acid with antipyrin, is of use in each of these three directions. The antipyrin acts upon the specific organism, benzoic acid is the expectorant, and the bromide combats the neurosis. Eulatin is a whitish powder of slightly acid, not unpleasant taste, and can be obtained in the form of tablets. Baedeker has given eulatin in 25 cases during a three months' epidemic of whooping-cough. He finds that it can be given in larger doses than have been previously recommended; children of 4 years received 12 tablets, each containing 0.25 gram, daily; children of 1½ years from 6 to 10 tablets. Eulatin is absolutely unirritating to the stomach, and in no case did it cause loss of appetite or diarrhoea. None of the 25 cases failed to show some improvement, the effect being the more marked the earlier in the disease the treatment was begun. In 17 cases eulatin alone was given; in the other 8 a narcotic was given, but usually only once in twenty-four hours. **Care was taken that the air in the room should be moist and fresh. A result of the drug which was invariably observed was a striking diminution and often a complete cessation of the**

vomiting; 20 of the children never vomited after the completion of the first few days of eulatin treatment, although 15 of them on other treatment had suffered from more or less severe vomiting. In one case of a child 4 years old, twenty-eight paroxysms of coughing, twenty-one of them accompanied by vomiting, had occurred on the day before eulatin was first given; three days later there were only twelve paroxysms and no vomiting. Another case described is that of a rickety child $1\frac{1}{2}$ years old with bronchopneumonia. Eulatin treatment was begun eight days after she first came under observation, when she was having about fifteen paroxysms of coughing a day and the temperature on the day before had been 38.6°C . From the first day of the administration of eulatin the child remained free from fever; after six days she was having ten paroxysmal attacks daily, but no vomiting; eulatin was now discontinued for three days, owing to a mistake on the part of the mother, and the child became perceptibly worse, with twenty paroxysmal attacks in the twenty-four hours, fifteen accompanied by vomiting. Under eulatin the number of attacks quickly diminished, and the vomiting ceased. The author's opinion is that the doctor who gives eulatin in whooping-cough may count upon the disease running a favorable course and ending in a comparatively speedy recovery.—*British Med. Jour.*

Antithyroidin in Exophthalmic Goiter.

Despite the many favorable cases of Basedow's disease treated with antithyroidin that have been published during the last years, some authors are still skeptical or speak of undesirable effects. F. Rosenberger has analyzed a few of these cases, and finds that in almost every instance the drug has not been given the proper way. In a case under his own care there was a very rapid diminution of heart dulness, despite severe bodily exertion. At present the apex beat is in the fifth space in the mammillary line, and the systolic murmur is much fainter. The heart-beats dropped from 100 to 84. The exophthalmos, though still present, is much less pronounced, while the struma did not decrease in size, and the lymph-nodes even became a little larger. The patient is increasing in weight, and her mental state is all that can be desired. Whenever there is slight indisposition, she actually asks for the drug. The dosage was six times 5 drops daily, increased every three days up to 60 drops, and then every two days up to 90 drops. After two days of rest, the amount was slowly decreased. No other precautions were taken, except that a purely vegetable diet was ordered.—*Zentralbl. f. inn. Med.*

PEDIATRICS.

IN CHARGE OF ALLEN BAINES AND W. J. GREIG.

Position and Work of the American Pediatric Society toward Public Questions. Presidential Address by T. M. Rotch, Boston.

Laws are in existence that forbid the employment of children under a certain age in factories, but in spite of these laws the children are employed. The reasons given for this, are: 1st—False statements as to age given by parents and others. 2nd—In many cases there is absolutely no record as to when the child was born. Therefore some other standard than age should be used to decide when a child was fit for work. Even though the age were known, children differed very much in their ability to work at the same age. Height and weight could not be depended on as a standard for this same reason. The method advocated by the author depends on the development of the osseous system of the child. Like the steel frame of a building, when the osseous system is strong and well developed, the resisting power of the child is greater. The *anatomic index* is the name given to this system and is based on a study of the epiphyses of the joints. The wrist joint can be taken as a type of the other joints. The development of the osseous centres of the carpal bones and the epiphysis of the radius sulna is the index.

This method could be used at all ages, and by it could be determined when a child was ready to enter kindergarten, or enter a grade in the school, what strain in athletics he would be able to endure, and finally what forms of labor he was able to perform. This left the test of ability of the child to do work entirely in the hands of the physician.

Dr. Rotch showed a series of pictures of the development of the wrist and how certain pictures corresponded to the kindergarten age, some to the school age, some to the athletic age. This is a very suggestive and valuable paper.

Cerebral Hemorrhage at Birth with Operation. (Dr. Nuan of New York.) Read at American Pediatric Association.

The child, delivered by forceps, was born asphyxiated and with difficulty resuscitated, but became of good color. The same evening there was found a facial palsy of the left side, the left arm was rigid and the hand was flexed at the wrist. Left leg rigid and knee jerk exaggerated. Convulsive movements of the

upper part of the body were present. Operation was decided on and performed by Dr. Taylor. No improvement followed and the child died one hour later. Post-mortem showed that, in addition to the clot removed at operation, there was an extension of it along the fissure of Sylvius.

Dr. Holt said that when one saw these children when 10 or 12 months old one felt justified in doing anything. But the difficulties of diagnosis were extremely great. In the first place all these hemorrhages were extensive and one could not be sure at operation that all the clots had been removed. The bulging of the fontanelle was the best single symptom in diagnosis. No importance could be attached to the bloody fluid in lumbar puncture. They should have localized symptoms, but when rigidity and convulsions were present they were very much in the dark.

Still's Disease. Report of two cases, by Hingston, of Montreal. (*Archives*, June, 1909.)

This disease was first described by Geo. F. Still, of Great Ormond Street Hospital, in 1896. The characteristics given by him are—a chronic progressive enlargement of the joints, associated with general enlargement of the glands and an enlargement of the spleen. Begins most frequently between the first and second dentition and is most common in girls. May begin with a high fever, but it is generally insidious. A slight stiffness is followed by a firm fibrous fusiform enlargement of the joint. This enlargement is a general thickening of the tissues around the joint and no bony changes. Tenderness and redness may be present, but no suppuration. Limitation of movement is marked and severe pain is caused by any attempt to exceed this limitation. Joints most frequently affected are the knees, wrists and those of the cervical spine, and then in order of frequency the ankles, elbows and fingers. Muscular wasting follows.

The most distinctive points are the splenic and lymphatic enlargements. The glands chiefly affected are the supra-trochlear and those of the axilla and neck. The glands do not mat together, are not tender, and do not suppurate.

The children are usually poorly developed. According to Still's original paper, the prognosis is bad, but lately he has modified this opinion and reports complete cures if treatment is instituted early enough. Etiology is obscure, but general opinion is that there is an infection by some specific micro-organism. Treatment consists in hygienic measures, hot baths, arsenic, massage and forcible movement of the joints.

Inoculative Tuberculosis following Ritual Circumcision. (Section of Pediatrics, N. Y. Academy of Med.) By Dr. Sara-Welt-Kakels.

A six-months-old child was circumcised by an elderly man, who sucked the wound in the orthodox fashion. Four weeks later there was an inguinal glandular swelling. When fluctuation occurred it was aspirated. Von Pirquet was positive and tubercle bacilli were found in the aspirated fluid.

Dr. Koplik said that these cases generally developed tuberculosis later on and died.

Adenoids and Nocturnal Enuresis. By Leonard Williams. (*British Journal of Children's Diseases*, June, 1909).

The author believes that, instead of one being the cause of the other, they are associated states, both due to a thyroid insufficiency. His success in treatment along this line has been marked. Children treated successfully for enuresis with thyroid extract had a subnormal temperature during the treatment. In myxoedema this depressed temperature is a marked feature. An argument which tends to show that in nocturnal enuresis there is a certain amount of thyroid inadequacy. Another point is that the majority of the children with this affection were undersized and when given thyroid extract in small doses immediately began to put on flesh. In adults one of the uses of the extract is to reduce the flesh, therefore he argues that there is an insufficiency in both cases. In children the extract has the effect of fixing the calcium salts in the body. Another argument refers to the high-arched palate. This is acknowledged to be present sometimes in children who have a thyroid inadequacy, and the author believes it to be due to defective fixing of the lime salts in the body. The dental caries in these cases he also believes to be due to the same cause.

Another symptom sometimes seen is "the eyebrow sign," viz., deficiency of the eyebrow over its outer third.

Conclusion.—Where the eyebrow sign is present, look out for other confirmatory signs of insufficiency, viz., urinary precipitancy, subnormal temperature, Gothic palate, carious teeth, urticaria, mental and physical lethargy, adenoids.

A warning is given that in every case in which the drug had been taken for over a month a nasal catarrh developed. He considers this a sign of thyroid excess (the sudden development of a catarrh of unusual severity and confined to the nose), and an indication to stop the treatment in the meantime.

Recent Findings Regarding the Disturbing Elements in Milk for Infants. F. C. Neff, Kansas City, in *Journal of Amer. Med. Assoc.*, Dec. 18, 1909.

The 1909 edition of Holt's *Pediatrics* and the last edition of Still's "Diseases of Children" in Britain give no evidence of any change in the commonly accepted opinion that it is the excess and inadaptability of the casein and the low percentage of fat that causes the chief difficulty in milk administration.

Recent studies in Germany place the responsibility on the salts, sugars, and in some cases the fats of the milk. The important salts are the sodium, potassium, calcium and magnesium chlorides, which are $3\frac{1}{2}$ times as abundant as in human milk and sometimes act as a direct poison to the child, even when reduced to the same or a lower percentage than in human milk.

Sugar Disturbance.—It is described as a sugar intoxication, and depends on the presence in the food of the sugar of cow's milk. Infants suffering from the various stages of intestinal and nutritional disturbance leading up to marasmus are the most susceptible to sugar intoxication, and an elevated temperature results if they are fed on sugar alone or on milk containing sugar. When the sugar is eliminated the fever disappears. (This refers, as I understand it, to the sugar of cow's milk.)

W. J. G.

Editorials.

METHODS OF TEACHING IN MEDICAL COLLEGES.

We publish in this issue an interesting letter respecting methods in the teaching of medical students. The Dean of the Medical Faculty of the University of Toronto is very deeply interested in this subject, and is carefully studying the situation. In his report to the Board of Governors he states that the candidates for the final examinations, during the last two years especially, were not properly qualified or "equipped," and that better methods of teaching were necessary. These facts are generally known, and the Dean, who has done admirable work since his appointment, has acted wisely in stating honestly and frankly the naked truth, unpleasant though it may be. When the Faculty, or at least the majority of its members, thoroughly appreciate that the teaching is defective there is reason to hope that a remedy will be found. Fortunately, for reasons which need not now be mentioned, such matters can be discussed in an impersonal way without any of the bitterness that, through partyism, has sometimes appeared in the past.

There is at the present time an able staff of teachers in the Medical Faculty of the University, and yet results at examinations have been growing worse from year to year for some time—more than two years. Several years ago the majority of the Faculty thought that too much time was given to purely didactic teaching; and, therefore, the numbers of didactic lectures were materially reduced. Notwithstanding such reductions, results grew worse. This was noticed by many who were watching carefully for at least ten years, but was not generally appreciated until quite recently. A further reduction was made for this session. If results are again bad at next examination it may be deemed advisable to abolish didactic teaching entirely. If, after the didactic teaching is abolished, or curtailed as much as pos-

sible, the results are still bad, the Dean may then conclude that investigations in other directions will be necessary.

The Faculty cannot fix things with mathematical precision. It is difficult to decide on the proper distribution of purely didactic and clinical teaching. Indeed, we scarcely know what a purely didactic lecture is. If, as some appear to suppose, it is simply the reading of an essay on a certain subject exactly like a chapter in a student's text-book, we quite agree with those who think that such a deliverance is of little or no value. We supposed that didactic lectures of that sort had gone out of fashion. Many, we hope, most of didactic lectures, as now delivered are largely clinical and demonstrative in character. We regret to say at the same time that bedside instruction is frequently largely didactic in character. We hope, however, that too much attention will not be devoted to this small portion of a very complex question. For the time being it may be well to agree with the Dean as to "purely didactic teaching." Many members of the Faculty think, and have thought for more than fifteen years, that there are other defective methods of far more importance than poor didactic teaching. We regret to say that the situation, so far as good medical teaching in Ontario is concerned, is *very, very serious*—even worse than the Dean's statement would indicate.

BRAIN TUMORS AND OPTIC NEURITIS.

Although we have made great progress in the diagnosis of intra-cranial lesions during the last decade, there is much more for us to learn; so that a recent contribution by Paton (Brain, 1909, No. 125), dealing more particularly with ophthalmoscopy as applied to nearly 400 cases in Queen's Square Hospital, London, the results being in every case checked off either by the surgeon or the pathologist, is peculiarly welcome. This is perhaps the first sustained effort in this direction, and the conclusions are exceedingly helpful.

Briefly summed up, Paton has found that precentral tumors always show a considerable amount of optic neuritis, postcentral a moderate amount, and often for a short time only. Severe neuritis is also found in tumors of the optic thalamus and midbrain, and of a less grave character in cerebellar and temporosphenoidal lesions. Subcortical tumors, on the other hand, have a mild neuritis, and this in only 50 per cent. of cases.

He finds any conclusions based on the eye affected very untrustworthy, the neuritis being just as often as pronounced on the affected side as on the uninjured. Neither does the pathological nature of the neoplasm play any part in the subsequent neuritis.

There are two regions of the brain in which new growths are fairly common without causing any lesions in the eye—the pons and the white matter of the cerebrum. Sometimes we may find optic atrophy without preceding edema, if the neoplasm exerts constant pressure upon the optic nerves or upon the chiasms.

F. A. C.

NEW GENERAL HOSPITAL IN TORONTO.

Since the grounds for the new hospital have been cleared we have realized the fact that the Board of Trustees have secured a property admirably adapted for their purposes. We are told that in the early spring the erection of the new hospital will be commenced. The Board of Trustees have taken great interest, and have expended much time and labor over the preparation of the plans for the various buildings to be erected. They have obtained the best available information calculated to add to the completeness of what they hope will be the finest institution of its kind on the continent. Mr. J. W. Flavelle, Chairman of the Board; Mr. P. C. Larkin, Vice-Chairman, and Mr. W. E. Rundle, Chairman of the Finance Committee, paid a second visit to Montreal January 2nd and spent a day in going over for a second time the Royal Victoria Hospital with a view to perfect their plans. We are told by the *Toronto News* that it is estimated that the buildings alone will cost \$1,800,000.

While in Montreal these gentlemen were the guests of Mr. James Ross, who is taking a very deep interest in Toronto's new hospital scheme. Mr. Ross is well known in Ontario. It is generally recognized that he thoroughly understands hospital building. It is only a few years since Mr. Ross presented to his native town of Lindsay one of the most beautiful and complete hospitals in North America. Mr. Ross accompanied the Toronto trustees when they were making their examination of the internal arrangements of the Royal Victoria Hospital, and rendered them every assistance in his power.

**THE INTERNATIONAL AMERICAN CONGRESS OF
MEDICINE AND HYGIENE, BUENOS AIRES,
ARGENTINE REPUBLIC, MAY 25th, 1910.**

The International American Congress of Medicine and Hygiene of 1910, in commemoration of the first centenary of the May revolution of 1810, under the patronage of His Excellency, the President of the Argentine Republic, will be held May 25th in Buenos Aires, Argentine Republic.

In order to facilitate the contribution of papers and exhibits from the United States, there has been appointed by the President of the Congress, Dr. Eliseo Cantón, and the Minister of the Argentine Republic at Washington, a committee of propaganda, of which Dr. Charles H. Frazier, Philadelphia, Pa., is Chairman, and Dr. Alfred Reginald Allen, Philadelphia, Pa., is Secretary.

The Congress has been divided into nine sections, each section being represented in the United States by its chairman in this Committee of Propaganda as follows:

Section 1—Biological and Fundamental Matters, Dr. W. H. Howell, Chairman, Baltimore, Md.

Section 2—Medicine and Its Clinics, Dr. George Dock, Chairman, New Orleans, La.

Section 3—Surgery and Its Clinics, Dr. John M. T. Finney, Chairman, Baltimore, Md.

Section 4—Public Hygiene, Dr. Alexander C. Abbott, Chairman, Philadelphia, Pa.

Section 5—Pharmacy and Chemistry, Dr. David L. Edsall, Chairman, Philadelphia, Pa.

Section 6—Sanitary Technology, Dr. W. P. Mason, Chairman, Troy, New York.

Section 7—Veterinary Police, Dr. Samuel H. Gilliland, Chairman, Marietta, Pa.

Section 8—Dental Pathology, Dr. George V. I. Brown, Chairman, Milwaukee, Wis.

Section 9—Exhibition of Hygiene—Dr. Alexander C. Abbott, Chairman, Philadelphia, Pa.

It will not be necessary for one contributing a paper or exhibit to the Congress to be present in person. Arrangements will be made to have contributions suitably presented in the absence of the author.

The official languages of the Congress will be Spanish and English.

Members of the following professions are eligible to present papers or exhibits: Medicine, Pharmacy, Chemistry, Dentistry, Veterinary Medicine, Engineering and Architecture.

Papers may be sent direct to the Chairman of the particular section for which they are intended or to Dr. Alfred Reginald Allen, Secretary, 111 South 21st Street, Philadelphia, Pa.

NOTES.

Promotion of Dr. Oscar Klotz.

We learn from the *Montreal Medical Journal* that Dr. Oscar Klotz, Assistant Pathologist at the Royal Victoria Hospital, Montreal, and Lecturer in Pathology in the Medical Faculty of McGill University, has been appointed Professor of Pathology in Pittsburg University. He left Montreal about New Year's to take charge of his new department. Dr. Klotz is well known in Toronto, where he received his medical education, and graduated M.B. from the University of Toronto in 1902.

We are told that both the Medical Faculty and the Hospital authorities made special efforts to keep Dr. Klotz in Montreal, but the importance of the position was too strong an inducement. Dr. Klotz will have, in connection with his new position, supervision of the pathological department of eight hospitals, all of which are connected with the University of Pittsburg.

After graduating, he was engaged in post-graduate work in Europe for some time. He settled in Montreal about six years ago, and has accomplished during those years much admirable work in original research in the Royal Victoria Hospital and at McGill.

We offer our sincere congratulations to Dr. Klotz. We have no doubt whatever that if he retains his health and strength his career in the future will be a brilliant one.

The Third International Congress of Physiotherapy will be held in Paris, March 29 to April 2, 1910, under the presidency of Professor Landouzy, Dean of the Faculty of Medicine of Paris, and the secretaryship of M. Vaquez. An exposition of everything appertaining to physiotherapy will be held in conjunction with the Congress. Correspondence should be addressed to M. Vaquez, Secrétaire Général, 27 rue du Général-Foy, Paris.

Toronto Hospital for Consumptives.

The fifth annual meeting of the Board of Trustees of the Toronto Free Hospital for Consumptives and King Edward Sanitarium, was held January 3rd. Dr. W. J. Dobbie, the physician-in-chief, in his report announces that during the past year 347 patients in advanced stages of tuberculosis had been treated at these institutions. Since the Toronto Free Hospital was opened in 1904, 818 patients have been treated in that institution: in addition 147 patients have been treated in the King Edward Sanitarium since it was opened in 1907, and with the extensions made within the last year to these institutions on the banks of the Humber, the former can now accommodate 100 patients and the latter 40.

Mr. W. J. Gage, President of the Board of Trade, Toronto, and President of the Board of Trustees of the Toronto Free Hospital and the King Edward Sanitarium, has offered to the University of Toronto five scholarships of \$100 each, and some gold and silver medals to be competed for by fourth and fifth year students of the Medical Faculty. The scholarships and medals are to be given for research work in early diagnosis and treatment of tuberculosis. All students competing in these examinations will be required to spend at least one week in the Free Hospital for Consumptives, Muskoka, where clinics will be given by the physicians in charge. Students will also be expected to do a certain amount of work in the well-equipped laboratory of that institution.

LABORATORY METHODS TO THE EXCLUSION OF CLINICAL INVESTIGATION.

I speak as a laboratory man, that the tendency of modern times has been to depend entirely too much on laboratory methods to the exclusion of clinical investigation. We have been taught that whatever tubercle bacilli are found in the sputum that this enables us to make an early diagnosis of pulmonary tuberculosis. I have seen many cases of incipient tuberculosis in which there were absolutely no tubercle bacilli discovered in the sputum! We must bear in mind that the tubercle bacilli are not ordinarily found in the sputum until the disease has reached the point where there is destruction of lung tissue; it may be the third stage, where cavities have formed from the breaking down of the caseous material and discharge of these masses into the bronchi, and their subsequent expectoration. Of course our ability to find the tubercle bacilli depends entirely upon their presence in the sputum, and it is perfectly possible in the early stages of pulmonary tuberculosis, when the diagnosis is most important, if we rely solely upon laboratory methods, we may be utterly unable to make the diagnosis. There may have occurred no breaking down of lung tissue, no discharge of tubercle bacilli, but physical examination of the patient's chest will always enable us, even in the early stages of the disease, in the majority of instances, to make a correct diagnosis, particularly if we consider carefully the history of the case. When we have established the diagnosis by clinical means, we will find our conclusions will be confirmed more often than not by laboratory methods.

I do not mean to underestimate laboratory diagnosis, because it occupies an important place in medical investigation, but what I say is—without fear of contradiction, because I think I have had sufficient personal experience to know—that we are not justified in turning over specimens of sputum, urine, blood and other secretions to the laboratory, where the work is done usually by inexperienced men, and expect them to make a diagnosis which we as clinicians are unable to do. I must insist that the clinical study which we take up here is of much more value to the advanced student and the average doctor than the oftentimes useless examinations of sputum for tubercle bacilli when the organisms are present in the lung but are not being discharged.

—Dr. H. M. Goodman in *International Clinics*.

Personals.

Dr. William J. Clark, 867 College Street, has recovered from an attack of acute appendicitis. Appendicectomy was performed January 21.

Dr. George McDonagh, of Toronto, had a slight attack of pneumonia in Goderich during Christmas week. He returned to Toronto January 16.

Dr. Orlando Orr had an attack of inflammation in the eye on account of which he was confined to his house for two weeks, from Jan. 10 to 24.

Dr. Mortimer Haight, of New Durham, Ont., returned to Canada in the latter part of December, after having spent about two years in Great Britain, Paris and Vienna.

Dr. D. King Smith was the guest of the Chicago Dermatological Society at the clinic of the American Dermatological Association, held at Chicago, December 29th, 1909.

Dr. Andrew MacPhail, of Montreal, came to Toronto on the morning of Jan. 20 and delivered an address at 1 o'clock that day before the Empire Club. On the following evening he dined at the Faculty Union, and met the President of the University, the Dean of the Medical Faculty, certain professors of the University, and some officers of the Canadian Medical Association, the hosts of the evening being Drs. Fotheringham and F. N. G. Starr.

Obituary.

JAMES M. COCHRANE, M.D.

We regret to announce the death of Dr. J. M. Cochrane, in London, England, where he has resided since 1890. He graduated from the University of Toronto in 1884, following which he was on the Resident Staff of the Toronto General Hospital. In 1885 he held the position of Resident Physician to the City Hospital, Hamilton, and became a licentiate of the Royal College of Physicians in 1890. He had a large and influential practice in London.

UZZIEL OGDEN, M.D.

Dr. Uzziel Ogden died at his home in Rosedale, Toronto, January 4th, aged 82. He was born in the Township of Toronto and studied medicine under Dr. John Rolph. He was licensed to practise by the Upper Canada Medical Board in 1849, and



THE LATE DR. UZZIEL OGDEN

received the degree of M.D. from the Victoria University in 1855. He commenced to practise in Toronto in 1852, and commenced to lecture in the Toronto School of Medicine in January, 1853. He held the chair of Materia Medica and Therapeutics from this time until 1870, when he was transferred to the chair of Obstetrics and Gynecology. At the time of the re-establishment

of the Medical Faculty of the University of Toronto in 1887 he was asked to take either Obstetrics or Gynecology. He chose the latter, and was Professor of Gynecology from 1887 to 1903. He had then completed fifty years as a teacher of medicine, and decided to give up active college work. He tendered his resignation to the University authorities, but continued to do private practice for a couple of years longer.

In his younger days Dr. Ogden was considered somewhat delicate. Since he commenced practice, however, in 1849 he did an immense amount of work for about fifty-five years thereafter. As a lecturer he shone especially as a teacher of midwifery, being undoubtedly one of the best on the continent.

He established in January, 1876, the medical journal which is now called *THE CANADIAN PRACTITIONER AND REVIEW*, and was its editor-in-chief for a number of years.

At a meeting of the Medical Faculty of the University of Toronto held February 6th the following resolution was passed unanimously: "In view of the announcement recently made of the resignation by Dr. Uzziel Ogden, after fifty years of continuous medical teaching, of the Chair of Gynecology in this University, this Faculty deems it fitting to commemorate in perpetuity upon its minutes the interesting fact of this unusually long period of active service in the cause of medical education. And, although during the greater part of this time Dr. Ogden was a teacher in the Toronto School of Medicine (whose career was, for the most part, closely identified with this University), yet for the last seventeen years his labors have been expended solely within these halls, and it affords the members of this faculty much pleasure to record their deep appreciation of his indefatigable industry and untiring zeal in the discharge of the duties of his chair. They owe him, also, a debt of gratitude for his solicitous care and skilful management of the affairs of the Faculty during his occupancy for three years of the office of Dean, the notable progress of the Faculty during which period he may perhaps regard as a satisfactory reward for his labor of love. While Dr. Uzziel Ogden's immediate connection with this University was through the Chair of Gynecology, yet in view of the fact that a majority of his recent colleagues had been in the past students of his in the department of Midwifery and Materia Medica and Therapeutics, it is not inappropriate, in testimony of his versatility and attainments, to make mention here of his well-recognized success as a lecturer and teacher in these branches also. To impart many of the facts and theories of medical science to successive generations of students for half

a century, and to impress upon them the indelible, though unconscious, stamp of high example in life and character, is an opportunity for usefulness and a sphere of influence vouchsafed to few, and in saying 'farewell' to Professor Uzziel Ogden, his colleagues in the Faculty of Medicine of the University of Toronto extend to him their heartiest congratulations upon the attainment of his jubilee, their sincere appreciation of his faithful service, their kind remembrances of his comradeship and leadership, their deep sense of his high example, and their earnest hope that his great improvement in health may long continue, so that his days of the lengthening shadows may be passed in well-earned rest, peacefulness and happiness."

GAWN SHAW CLELAND.

Dr. G. S. Cleland died at his residence, 331 Broadview Avenue, January 3rd, 1910. He received his medical education in the Toronto School of Medicine, and graduated M.B. from the University of Toronto in 1882. After graduating he spent one year as house physician in the Toronto General Hospital. In the latter part of 1883 he commenced practice in Riverdale, Toronto. He soon acquired a large practice and worked early and late in the interests of his patients. He was one of the finest examples of an honest and noble physician that Canada has produced.

The *Toronto Globe* told much truth in a few words in the following sentence: "He was loved and respected by all his patients and the whole community of Riverdale, and indeed was looked upon throughout the district as another Dr. McClure."

One of Dr. Cleland's colleagues of the Woman's Medical College has sent us the following communication, which we are very glad to publish:

"Everyone who knew the late Dr. Cleland will hear with deep regret of his death in the prime of life from that insidious foe which spares no class, age or profession—tuberculosis. He was modest and unassuming in his manner, but under that quiet and unobtrusive exterior there was much real ability. Sound professional knowledge and no small share of that kindness of heart which adds withal a charm that doubles the influence and value of knowledge and ability. Dr. Cleland practised in the east end of the city of Toronto, and while he will long be remembered there, it is perhaps only just to add that he will longest be remembered by his old students at the Woman's Medical College, now scattered all over the world. His subject there was

Anatomy, and it was often remarked that it was almost unknown for a student from the Woman's Medical to fail in that subject. Dr. Cleland was master of it and never at a loss in the lecture-room, no matter what question might suddenly arise. His gentle and quiet manner allowed the most diffident student to gain confidence, and his devotion to his work was a real inspiration to his class. *Requiescat in pace.*

JAMES HENRY RICHARDSON, M.D., M.R.C.S. Eng.

Dr. J. H. Richardson died at his residence, 36 St. Joseph Street, Toronto, January 15, aged 87. Dr. Richardson began his medical studies in 1847 with Dr. Rolph, then living in Rochester, N.Y., and remained with him two years. He returned to Toronto in 1843 and attended the first course of lectures delivered by the Medical Faculty of King's College. In 1844 he went to England and spent three full sessions in attendance at Guy's Hospital. He spent the summer of 1847 in Paris, where he worked in various hospitals and attended certain lectures. After receiving the diploma of the Royal College of Surgeons in 1847, he returned to Toronto and commenced practice. In 1848 he became M.B., King's College. In 1850 he was appointed Professor of Anatomy in the Medical Department of the University of Toronto, and held that position until the medical department was abolished in 1853. Some years later he became Professor of Anatomy in the Toronto School of Medicine, and in 1887 became Professor of Anatomy in the re-established Medical Faculty of the University of Toronto. He resigned from this position in 1898, and was made a meritorious professor. He was a member of the Senate of the University of Toronto for many years. He always took a great interest in outdoor sports and military matters. He was for many years surgeon of the Field Artillery and afterwards surgeon of the 10th Royal Regiment.

Dr. Richardson was chiefly known to the profession of Canada as an able surgeon and a singularly efficient teacher of anatomy. He was both loved and respected by all his student classes. In the year 1903 Dr. Richardson was entertained at a large banquet in Toronto by medical friends from all parts of Canada and the United States. The following quotations appear on the menu card in connection with the toast to the guest: "A man with whom we have often fished and conversed, whose experience, learning, wit and cheerfulness made his company to be esteemed one of the delights of mankind; this man was also a

most dear lover and frequent practiser of the art of angling, of which he would say: ' 'Twas an employment for his idle time which was not idly spent, a rest to his mind, a cheerer to his spirits, a diversion of sadness, a calmer to unquiet thoughts, a moderator of passions, a procurer of contentedness, and that it begat habits of peace in those that profest and practie'd it.' "

We understand that the late Dr. Cleland, whose untimely death we announce in this issue, was the first to suggest that the graduates should present a portrait of Dr. Richardson to the University at this banquet. One of the most interesting events of the evening was the unveiling of the portrait by Dr. Cleland, and in doing so he referred briefly but in warm terms to the distinguished services rendered to the University by Dr. Richardson.

After the unveiling of the portrait, Professor W. H. Ellis, on behalf of the old pupils, presented the following address:

*To James Henry Richardson, Esquire, M.D., F.R.C.S. (Eng.),
a meritorious Professor of Anatomy in the University of
Toronto:*

SIR,—We, your old students, have been desirous of expressing in some suitable way our respect for you as a teacher and our devotion for you as a friend, the respect and affection which you inspired in us as under-graduates, and which the experience of later years has only served to increase. To fulfill this purpose we have thought that we could do no better than to present your portrait to the University with which from its earliest years you have been so closely identified, whose cause you have so loyally defended, and whose reputation you have so signally advanced.

For nearly half a century you have labored in the cause of medical education with unwearied patience and with ungrudging devotion. We wish to assure you that your labor has not been in vain.

To the foundations laid by you and by your colleagues of the Toronto School of Medicine the University of Toronto owes in no small measure the success of her Medical Faculty, and we, your scholars, owe to you our thanks for sound teaching and kindly help for high ideals and a worthy example, a debt which we can never repay, but which we are proud to acknowledge.

We feel, therefore, that the building which is about to become the home of the Medical Faculty of the University of Toronto should have no fitter ornament to decorate its walls than the portrait of one who has so many claims upon the grateful memories of its graduates. It is our great privilege in making this offering to have the opportunity of testifying at the same

time our loyalty to our Alma Mater and our love for her distinguished son.

We beg to sign ourselves, on behalf of the subscribers, your grateful pupils and faithful friends.

(Signed)

JOSEPH BASCOM, etc.

Dr. Richardson retained his physical vigor and brain power until a short time before his death. He was jail surgeon from 1858 until 1909.

One of the most interesting incidents in his life was his work in connection with the choice of Canada's national emblem. At a meeting of citizens of Toronto which was held to arrange for the entertaining of the Prince of Wales, now King Edward VII., on the occasion of his visit to Toronto in 1860, it was upon the motion of Dr. Richardson that maple leaves were adopted as the chief decoration. From that came the adoption of the maple leaf as Canada's national emblem.

DR. J. H. RICHARDSON.

An appreciation by John Hunter, M.B., Toronto.

Other, and more competent, pens will write the biography of the late Dr. Richardson, but none can exhaust the rich veins that intersected each other throughout the length and breadth of so great a life. Standing by the bier of such men as the late Drs. Richardson and Ogden, who could help regretting, not only the death of these men, but the loss of so much knowledge, experience and skill? With the exception of what they were able to impart to others, all the rich storehouse of knowledge, experience and skill they were able to garner during their long life, passed into oblivion at their death. Against this loss stands the fact that most of man's knowledge, experience and skill has only a transitory value. In the earlier days of pioneer life in Ontario, knowledge, experience and skill in "breaking in" of oxen, in the use of the axe, scythe, cradle and flail were exceedingly valuable assets to the farmer, but with the advent of horses, traction engines, self-binders, steam threshers, the former knowledge, experience and skill became quite valueless. A great part of the physiology, pharmacology, etiology and pathology of Dr. Richardson's earlier years is now but the "flotsam and jetsam" of medical literature.

If much of our knowledge, experience and skill is of so ephemeral a character, what gives immortality to any man? Is it not that complex, synthetic aggregation called character? Age or disease plays havoc with every other human attribute, but David's virtues are just as inspiring, and his vices as abhorrent to-day as when he sat on Israel's throne. It was Dr. Richardson's character that elicited the cordial welcome that always greeted him on entering any medical assembly. In his case, heredity, culture and environment, furnished the factors that a masterful will succeeded in moulding into an exceptionally strong, virile character, the outstanding features of which were keenness of intellect, integrity, and a high sense of honor. All his students, and those who enjoyed social intercourse with him, can bear ample testimony to the greatness of his intellectual attainments. No one could impeach his integrity with impunity. Away back in the "seventies" an attempt was made to remove him from his position as jail surgeon and put a political favorite in his place. He had filled the position so efficiently that he felt confident he could not be truthfully assailed, so lost no time in letting his political masters know that his position was impregnable. It was the injustice of the act, not the pecuniary loss, that appealed to him most strongly. He was not disturbed. His sense of honor made him a most valiant defender of scientific medicine. At a meeting of the Ontario Medical Association in the "eighties" the reader of a paper made some favorable allusions to the virtues of homeopathy. Dr. Richardson rushed onto the platform and gave a most scathing denunciation of homeopathy. A host of readers will recall his address on Christian Science. The incisive irony used in the paraphrasing of Mrs. Mary Baker Eddy's quasi-scientific utterances was thoroughly enjoyed by the audience.

The late Dr. Richardson "rang true" to the highest ideals in moral and medical ethics, and in regard to both of these it can be justly said of him, "he fought the good fight; he finished the course; he kept the faith," and in the hearts of his students and friends his memory will be long encircled in a halo of honor.

Dr. Garnet Patrick Hydman, youngest son of the late Dr. Hydman, of Exeter, Ont., died at Minot, S. Dakota, Nov. 24th, 1909.

Dr. Jno. Emil Traub, formerly a resident of Ontario, died at New York December 25, 1909.

Correspondence.

MEDICAL TEACHING AT THE UNIVERSITY OF TORONTO.

Editor of CANADIAN PRACTITIONER:

In looking over a short extract from the Dean's Report of the Medical Faculty of Toronto University, some things specially attracted my attention—I was sorry, although not surprised to see them. (See Page 21 of Report of Governors up to June 30th, 1909.)

1. He speaks of some methods of teaching requiring improvement.

2. Of poor results having been shown for "*two years*" past, at the examinations of the University and of the Medical Council. He candidly admits "*that on the admission of our teachers students were not properly equipped*" for their examinations. The Dean also says that the students were not altogether to blame, and that "*better methods*" of teaching are a necessity "*in some departments.*" This is a candid and honorable admission to make.

3. It is further said, that the general feeling of the Faculty of Medicine is that far too much time is given to purely didactic teaching, leaving but little time for reading and physical exercise.

4. He also says that juniors occupy to a considerable extent and in some cases, "*in two or three teaching Departments*" positions of responsibility. "Experience tells us that it is difficult for such teachers to keep up enthusiasm in all branches." "*This, I think, should, as far as possible be avoided.*"

The writer of this letter would say here, that only men of *known* experience should occupy any positions whatever, where this is absolutely essential, to secure even a moderate degree of success.

It is not my special business to comment on these brief allusions to matters, in which changes or improvements are suggested, but, being much interested in sound medical education in every department, and in all our medical colleges, I think it both right and friendly to address you, an old and successful medical teacher, and, while not reflecting on anyone, to give you my thoughts regarding matters of great importance not only to the medical colleges, but to the entire profession, and, above all, to the public, who are chiefly concerned, as they should be, in

everything connected with the professional teaching of the men who are to be their medical advisers in the immediate future.

As to the point first mentioned in the extract, it needs no remark, as the writer simply says that improved methods of teaching are needed.

As to No. 2, *re* examinations, this points to something—or perhaps I should say—to many things very defective, some in the students, many in the methods. I hope for the sake of the University's credit, that no such things may ever again be possible. But the only way to bring this about is, for all the students to work harder, and for the teachers to bring greater ability, and more zeal and energy to bear upon their teaching. Several of the examiners spoke to me at the time when the examinations referred to took place, and all of these said that large numbers of the candidates were *very deficient* in the *most simple treatment of cases at the bedside, including both the diagnosis and prognosis*. If these two bad years lead to great changes for the better, they will prove blessings to the University and to the public.

As to No. 3, it strikes me strongly, that the Faculty has fallen into one of the most egregious errors in holding the view they do, in regard to the value of didactic teaching. The writer who did a good share of very hard work during his whole student life, can assert to-day, that his opinion was *then*, and is *now*, that really good didactic teaching is the backbone of a thoroughly sound medical education, bearing the same relation to this, which the vertebral column bears to the rest of the body, round which it is all built.

When students hear a really good lecture, well prepared and well delivered by a teacher of admitted ability, it interests them throughout, whatever be its subject. They are powerfully drawn to their books as only a teacher of true genius for teaching can draw them, and as a matter of course, they read all within their reach on the topic. Whether the lecture has been on a medical, surgical or any professional matter of practical value, it prepares them to profit by every reference made to it by clinical teachers who subsequently take it up in a hospital ward. Without having received such didactic instruction as that I have referred to, clinical teaching is in the very nature of things very largely time wasted. But to those who have had that instruction beforehand, clinical lectures, conscientiously prepared and well delivered, are worth their weight in gold to all good students.

May not the large percentage of rejections the Dean speaks of during two years have been largely due to *the defects, the im-*

perfect character, and the too great brevity to which the didactic courses have been and are still being reduced? For one, and only one of very many I believe this to be the true explanation of the results complained of, which, it is to be hoped, will never be repeated.

As to No. 4, it is doubtless a most serious mistake to appoint juniors to positions as clinical teachers in practical subjects, for unless men have had a good deal of experience in general practice of their own, for a considerable time, as well as the hospital advantages of their college days, they cannot be expected to hold the attention, much less to enthuse, their classes.

Yours very sincerely,

A STRONG ADVOCATE, IN THE INTERESTS OF THE ENTIRE PROFESSION,
AND OF THE PUBLIC, OF GOOD, ABLE, SOUND, *Practical Medical Education.*

Book Reviews.

DISEASES OF THE NOSE, THROAT AND EAR. By William Lincoln Ballenger, M.D., Professor of Otology, Rhinology and Laryngology, College of Physicians and Surgeons, University of Illinois; Fellow of the American Laryngological Association, etc., etc. Second edition. 491 engravings and 17 plates. Lea & Febiger, Philadelphia and New York. 1909.

While the first edition of this work was both comprehensive and elaborate, the second edition, thoroughly revised, and much of it rewritten, far surpasses it in completeness. The author has spared no pains in its preparation, and, having examined a vast amount of new material, he has incorporated all that he deemed worthily available within the pages of the new book, bringing the medical and surgical treatment of diseases of the nose, throat and ear down to the most recent date.

Upon the subject of sub-mucous secretion, he gives new engravings and new descriptions, coupled with a strong advocacy of its more general adoption in practice. At the same time he wisely describes, giving illustrations, many of the other modern methods of operation, and advocates some of them as more suitable than the sub-mucous resection for the treatment of certain types of deviation of the septum.

The surgery of the accessory sinuses also comes in for a full share of attention, several new methods of treatment, together with new illustrations, being given.

Diseased tonsils have likewise a new chapter written upon them. On this subject the writer's views are most advanced. With all the breadth of a cosmopolitan, he describes other methods of operation and treatment, while he pins his faith to the one of complete tonsillectomy, removing not only the tonsil in its entirety, but the capsule also, as the only surgical method to be adopted, whether the patient be a child or an adult.

It is a serious question whether such an advanced view, accepted though it is by many, should receive the universal application which the author advocates. Many writers of experience still believe that the normal tonsil has a distinct function to perform in the animal economy, the proof being the gradual development of the tonsil, followed by its gradual recession during the early years of life. There may be no question about the advisability of removing the entire tonsil in the adult, after its physiological function has ceased to operate and the tonsil has

become diseased; but during childhood the condition is entirely different. In the large majority of cases in which the tonsil becomes enlarged in a child it is simply a matter of hypertrophy of normal tissue; and it may well be asked if careful reduction by surgical methods to a normal size may not be better for the individual and possibly for the progeny, that may follow after, than complete extirpation of the overgrown body?

The elaboration of that part of the work devoted to the ear marks a distinct advancement. The functional tests of the labyrinth are fully described and illustrated, while many other points in connection with ear disease are treated with the most careful consideration.

Ballenger's new book, taken in all its departments, is without doubt one of the best upon the triple subject that has ever been issued by the press. Complete in all its details, widely and freely illustrated, it indicates the enthusiastic hand of a master—and yet the enthusiasm of a man who has breadth of vision. While adhering closely to certain lines of treatment, which in his hands have proved eminently successful, he is broad enough to see that the end is not yet; but that each successful effort, be it small or great, is simply a stepping stone toward higher things.

P. B.

A TREATISE ON THE PRINCIPLES AND PRACTICE OF MEDICINE. By Arthur R. Edwards, A.M., M.D.; Professor of the Principles and Practice of Clinical Medicine, and Dean of the Faculty in the Northwestern University Medical School, Chicago; Attending Physician to Mercy, Wesley Hospitals, etc. Second and thoroughly revised edition. Illustrated with 100 engravings and 21 plates. Published by Lea & Febiger, New York and Philadelphia. 1909.

We have read with the greatest interest Dr. Edward's excellent production, and find it a thorough and exact treatise on the subject of medicine. It has been brought up to date in the most careful manner, nothing of practical value being omitted. We note with pleasure that the sections on treatment have received their full share of notice, the methods adopted being eminently practical; tables of differential diagnosis will also be found of great value, as also will the many excellent illustrations, charts and colored plates. The section devoted to the nervous system is most complete and clear, spinal and cerebral localization being especially well described. We beg to offer the suggestion that

this treatise be added to the list of those recommended by the Ontario Medical Council, and also to congratulate the author on the second edition of his work.

PULMONARY TUBERCULOSIS AND SANATORIUM TREATMENT. A record of ten years' observation and work in open-air sanatoria. By C. Muthu, M.D., M.R.C.S., Associate of King's College, London; Physician, Mendip Hills Sanatorium, Wells, Somerset; late Physician, Inglewood Sanatorium, Isle of Wight. London: Bailliere, Tindall & Cox, 8 Henrietta St., Covent Garden.

Numerous work of somewhat similar title have appeared during the last six months, but this we consider the best of the lot. Written in clear and concise English, this excellent monograph will be found of great help to everyone who has to treat those unfortunates afflicted with the great white plague. Although Dr. Muthu speaks in most hopeful terms of the open-air treatment of tuberculosis, and quotes statistics perhaps better than we can get in Canada, yet he is not so enthusiastic as to forget the fact that a certain number of patients will die in spite of all we can do for them. Altogether a sane and helpful summary of this very important subject.

THE MORPHIA HABIT AND ITS VOLUNTARY RENUNCIATION (a personal relation of a suppression after twenty-five years' addiction), with notes and additional cases. By Oscar Jennings, M.D. (Paris), Fellow of the Royal Society of Medicine. London: Bailliere, Tindall & Cox, 8 Henrietta St. Paris: Brennano, 37 Avenue de l'Opera.

Dr. Jennings' long experience in this particular branch of medicine has made his method of treatment famous in England and on the Continent, where there are many who can testify to its efficiency. The cases he reports in this work of 500 pages are certainly very interesting and conclusive, and are of inestimable value to any practitioner who is called upon to treat one of these afflicted *habitués*. The method he advocates is entirely rational and physiological.

Selections.

The Jonnesco Method of Anesthetization.

In the editorial article entitled "A Proposed Revival of Spinal Anesthetization," published in our issue for December 11th, we took a conservative attitude, because, whatever our impression was, we did not think it fair to our distinguished visitor to condemn his method of anesthetization without ample warrant in facts. The facts have not been slow in showing themselves, and they only confirm the feeling of distrust which we entertained when the article mentioned was prepared. We have now no hesitation in saying that it would be injudicious to substitute spinal anesthetization for the commoner methods of securing general anesthesia—that is to say, in the generality of cases.

In two out of three cases related by our London correspondent in the *Journal* for December 18th, the result may, we think, be fairly called unsatisfactory. In one of them, says our correspondent, "the skin incision was quite unfelt, as was the division of the epigastric aponeurosis, but as soon as an attempt was made to withdraw the omentum and stomach (the case was one of cancer of the stomach) the patient groaned and said he felt 'as if his insides were being pulled out.' " In another case, one of chronic suppuration in the mastoid antrum, "upon incising the periosteum some pain was complained of, and, as this persisted at each attempt, a second injection was given. This, however, failed to have the desired effect, and the operation had to be completed under general anesthesia."

In this issue of the *Journal* we publish two articles relating to Professor Jonnesco's recent demonstrations in New York. One of them is by Dr. Virgil P. Gibney, of the Hospital for the Relief of the Ruptured and Crippled, and the other is by Dr. Aspinwall Judd, in which he reports the four cases of operation under stovaine and strychnine anesthesia performed in Dr. Robert T. Morris' service in the New York Post-Graduate Medical School and Hospital. It will be noticed that Dr. Gibney's cases showed more favorably than the others for the Jonnesco procedure, but we cannot overlook the fact that Dr. Gibney says: "Personally, however, I should hesitate a long while before I allowed any high injection of any solution into my spinal canal. The vascular supply within the canal is too rich, and the danger of hemorrhage induced thereby sufficiently

great, to make me prefer local anesthesia or anesthesia through the respiratory tract."

"The operation in the first case," says Dr. Judd, "lasted more than thirty-five minutes, the time allotted by Professor Jonnesco in which to do efficient work under his method of anesthesia. The patient was excitable and expected pain, but without question a considerable proportion of his pain was very real." "In the third case," says Dr. Judd, "we certainly had a very narrow escape from respiratory failure, and only careful nursing and prompt and frequent stimulation subsequent to the operation averted a fatal issue." "Note the delirium," he significantly adds.

"While the use of stovaine and strychnine anesthesia in competent hands and in selected cases," says Dr. Judd, in conclusion, "unquestionably has its advantages over the general forms of anesthesia, still, at the present time we are not convinced of its efficiency in general use. Administered in the upper portion of the spinal cord, if we can draw conclusions from the one case mentioned, its dangers far exceed those of the older methods." However, Dr. Morris has a good word to say for the Jonnesco method. In a note dated December 17th, which he has been kind enough to send us, he says: "It is my own impression, as you state in the editorial, that the strong point in Jonnesco's work is the skill which he has developed in the practical application of previous known methods. There are a good many patients for whom spinal anesthesia will probably be desirable—for instance, alcoholics, drug habitués, patients who have had previous operations and who have a peculiar hatred for even the odor of anesthetics, patients in whom vomiting after operation might endanger some kinds of suturing or might cause hemorrhage from tension on the suture, as in some kinds of bowel surgery. There are some cases of advanced diseases of the heart and lungs in which the stovaine method would be desirable. Feeble old men who are to be subjected to operation for removal of the prostate or stone in the bladder, I think, will do better as a rule under stovaine anesthesia."

Professor Jonnesco has given a demonstration in Philadelphia under the auspices of Dr. Edward Martin. Kindly responding to a letter of inquiry of ours, Dr. Martin says: "I am in thorough accord with the editorial clipping which you sent (from the *New York Medical Journal* for December 11th). . . . He (Professor Jonnesco) injected three cases in our surgical clinic. The third was for breast amputation. The

patient narrowly escaped death, artificial respiration being required. This in the early stages of the operation. Later, ether had to be given to control pain. There has been one death here at the hands of an imitator. One case of partial paralysis in the Philadelphia Hospital resulting from this method of anesthesia as practised by a Philadelphia surgeon."

It will be seen that the observers whom we have here cited concede Professor Jonnesco's great skill in technique. Doubtless also they would agree as to his exceptional judgment in adjusting the doses of stovaine and strychnine. Moreover, they all seem disposed to say the best that can be said of his method of anesthetization. From the sum of their testimony, however, we must condemn the method as a routine procedure, though we admit its usefulness under certain special conditions.—Editorial in *N. Y. Med. Journal*.

Fellows claims that the following will give immediate relief and cure all forms of eczema:

Lac Sulphuris	℥ij
Zinci Oxidi.....	℥j
Ichthyoli	℥ss.
Mentholis	grn. xxx
Petrolati	℥iv

M. Sig.: Thoroughly rub in each night after washing with sulphur soap or some germicidal soap.—*Charlotte Med. Jour.*

Barber's Itch Ointment.

The following is said to be effective:

Creolin-Pearson	fl. ℥j.
Hydrargyri Oleatis	
Zinc Oxidi	aa ℥iv.
Acidi Salicylici.....	℥j.
Petrolati	℥iss.

—*Pacific Pharmacist.*

Miscellaneous.

Borderland Cases of Insanity.

Of course it is so obvious as to require but little emphasis to state that insanity is treated now with far greater intelligence than was formerly the case. As a matter of fact, mental disorders were treated not only with an absolute lack of intelligence, but with a considerable amount of brutality. A new era in the treatment of the insane was inaugurated by Pinel in France, Elizabeth Fry in England, and Rush and Miss Dorothy Dix in this country. To Miss Dix is chiefly due the honor of first organizing institutions for the insane and of releasing many patients from madhouses and from the strong rooms of poor-houses and from private homes. Dr. Carlos F. MacDonald is mainly responsible for the State Care Act of 1889, and was a pioneer in the most modern methods of treating insanity. There is little doubt that progress has been made in recent years in regarding insanity from a more rational standpoint, although it must still be confessed that even the most advanced psychiatrists of the present day are to a great extent groping in the dark. That is to say that there are many obscure points which require illuminating. Light is breaking in slowly but surely, and it would seem as if the day is coming when our conceptions of insanity will be established upon a thoroughly sound and comprehensible basis. Of the present time it might not be mis-stating the case, perhaps, if it were said that it is a transition period. Ideas exist in abundance, but as yet they have not been really grasped. The German school is in the front rank from the psychological point of view, and Kraepelin is its chief prophet. As Adolph Meyer points out in the New York State Hospital's Bulletin, published in September, Kraepelin has shaken the very foundations of the old structures, and, in the opinion of Meyer, the director of the psychiatric clinic of Munich is to be thanked for the fundamental shaking up of tradition, and for the declaration of independence and of the right of seeing things according to their medical importance. American alienists are following in his wake, so far as grouping insanity under headings which commend themselves to their good sense and best judgment is concerned, rather than by classing cases under a set form.

Throughout the civilized world there is a tendency on the part of the medical profession to pay far more attention than

has up to the present time been the case, to what are known as borderland cases of insanity. In many large hospitals, wards are set aside in which to place patients who have exhibited mental idiosyncrasies which seem to indicate that they are fit subjects for trained observation. While, however, all are agreed that wise foresight is being shown in watching borderland cases, the question at once arises, What is a borderland case? Meyer answers, "Any case that can be benefited by hospital treatment." This answer is scarcely sufficiently definite, and A. W. Ferris, writing also in the State Hospital's Bulletin, amplifies it as follows: "Any case in which symptoms of commencing mental trouble have been noticed, and which should have a psychiatrist's care. Within the area of the borderland we must include psychasthenia, with its impulsions, obsessions, doubts, phobias, anguish, agitation, delirium of touch; and for practical purposes, we must include all psychoses in their incipency; we must include psychopathic exaltation and psychopathic depression; constitutional inferiority; disorders in the train of thought, disorders of volition, of the emotions, of memory, of attention, and of personality, whenever such disorders are more than transient." This description is fairly comprehensive, and Ferris advises parents and teachers who detect in a child under their care any such symptoms, or an adult who suffers from the like, to consult a psychiatrist without loss of time.

In 1908, New York State amended the Insanity Law, and threw open her thirteen civil State hospitals for the reception, without commitment and on their own application, of patients whose minds are not so impaired as to render them incapable of forming a rational judgment. It is stated that since the change in the statute, comparatively few voluntary patients have taken advantage of the opportunity to enter the State hospitals, Ferris being of the opinion that the small number is due apparently to want of information or apathy of the general practitioner; to the idea persistent among the laity that real insanity is always marked by violence, and to the feeling that possibly recoverable cases of mental disorder should be kept at home, the hospital being regarded by some citizens as merely a receptacle for the desperate or hopeless cases. There is yet another reason which carries some weight with a large number of people, namely, the slur that is cast upon an individual and even upon his family and relations by the mere suspicion of insanity. This feeling may be due to ignorance or to a faulty comprehension of the matter, but it undoubtedly exists and must be reckoned with.—Editorial in *N. Y. Med. Record*.

Treatment of Disease—The Few Great Drugs.

Osler says that from the day the student enters the hospital until graduation he should study under skilled supervision the action of the few great drugs. Which are they? The author does not give his list, but quotes a story told of James Jackson; when asked which he considered the greatest drugs, his reply was: "Opium, mercury, antimony, and Jesuit's bark; they were those of my teacher, Jacob Holyoke." "Yes," replied his interlocutor, "and they were those of Holyoke's master, James Douglas, in the early part of the eighteenth century."

The author tells us that his list is a much longer one. It is his belief that the student should follow most carefully the action of those drugs the pharmacology of which he has worked out in the laboratory. He should be sent out from the hospital knowing thoroughly how to administer ether and chloroform. He should know how to handle the various preparations of opium. Each ward should have its little case with the various preparations of the ten or twelve drugs, and when the teacher talks about them he should be able to show the preparations. He should study with special care the action of digitalis on the circulation in cases of heart disease. He should know its literature, from Withering to Cushney. It should be taken as the typical drug for the study of the history of therapeutics—the popular phase, as illustrated by the old woman who with it cured the Principal of Brasenose; the empirical stage, introduced by Withering in his splendid contribution, a model of careful clinical work of which every senior student should know; and the last stage, the scientific study of the drug, which he will already have made in the pharmacological laboratory. He should day after day personally give a syphilitic baby inunctions of mercury; he should give deep injections of calomel; and he should learn the history of the drug from Paracelsus to Fournier. He should know everything relating to the iodides and the bromides, and should present definite reports on cases in which he has used them. He must know the use of the important purgatives, and he should have a thorough acquaintance with all forms of enemata. He should know cinchona historically, its derivatives chemically, and its action practically. He should study the action of the nitrites with the blood-pressure apparatus, and he should over and over again have tested for himself the action, or the absence of action, of strychnine, alcohol and other drugs supposed to have a stimulating action on the heart and blood-vessels. While the author would, on the one hand, imbue him with the firmest faith in a few drugs, "the friends he has and

their adoption tried," on the other hand he would encourage him in a keenly skeptical attitude toward the Pharmacopœia as a whole, ever remembering Benjamin Franklin's shrewd remark that "he is the best doctor who knows the worthlessness of most medicines." We may well say this is a heavy contract and one which it is impossible to carry out. Perhaps it is with our present arrangements, but this is the sort of work which the medical student has a right to expect, and this is what we shall be able to give him when in his senior years we give up lecturing him to death, and when we stop trying to teach him too many subjects.—Abstract from *Therapeutic Gazette*.—B. M. J.

In his last book, "La Chemise," Anatole France has some sly hits at the medical profession. King Christophe V. complained of loss of appetite, pains in the loins, weight in the stomach, shortness of breath and palpitations of the heart, headache, giddiness, cramp—in short, of all the ailments catalogued in quack advertisements and Christian Science "testimonies of healing." Naturally, his two chief physicians, Dr. Saumon and Professor Machellier, made the diagnosis of "neurasthenia." The condition is described by one learned leech with judicious vagueness as an "imperfectly defined morbid entity." The other discourses on it in more eloquent, if not more enlightening, fashion, as a "veritable pathological Proteus, who, like the Old Man of the Sea, transforms itself ceaselessly in the grasp of the practitioner and assumes the most grotesque and terrifying appearances: by turns the vampire of a gastric ulcer or the snake of a nephritis, suddenly it displays the yellow face of jaundice, shows the hectic cheeks of tuberculosis, or twines strangling hands which would make one believe that it has hypertrophied the heart; at last it presents the spectre of all the ills that afflict the human body, till, yielding to medical art and owning itself beaten, it flies away in its proper figure of ape of diseases." Saumon was handsome and popular with women; he recognized aristocracy even in a cæcum and a peritoneum, and was careful in his regard of the social distances which separated one uterus from another. Machellier, short and stout, was copious in speech. He and his professional brother hated each other; but having noticed that in fighting they destroyed each other, they affected a perfect understanding and a full agreement in opinion; one had no sooner expressed an opinion than the other made it his own. Although having a

mutual contempt for each other's intelligence, one was not afraid to borrow the other's opinion, "knowing that there was no risk in doing so, and that they would neither gain nor lose by the exchange, as it was only medical opinions that were in question; so they agreed on a course of treatment for the King, but the unfortunate monarch got steadily worse. His courtiers urged him to call in Dr. Rodrique, whose fame extended over the whole world. He charged fees of an amount that made millionaires recognize his merit. His brethren, whatever they thought inwardly of his knowledge and character, spoke with respect of a man who raised the medical fee to a height till then unknown. Many praised his methods, and professed to be able to apply them at a lower figure. Dr. Rodrique excluded the products of the laboratory and of the pharmacy from his therapeutic armament, and his methods of treatment had a disconcerting eccentricity and inimitable singularities. An instance of this forms the plot of the story. The King is unwilling to call him in, for, as he sagely observes, he knows that his official doctors do nothing, but he does not know what Rodrique is capable of doing. Nevertheless, after much intrigue and diplomacy he is induced to send for Rodrique, whose prescription is that His Majesty shall wear the shirt of a happy man next his skin, so that his dry integument may absorb the particles of happiness exhaled by the sudoriparous glands of the happy man. With some difficulty the King is got to consent to submit to this treatment; then the difficulty is to find a happy man. When found at last, he has no shirt!—*British Med. Jour.*

The Canadian Medical Exchange wishes us to say that this season of the year is probably the best of any for physicians desiring to sell their practices, to offer them, as the Exchange has a great many more bona fide buyers registered with them, who are looking for a location, than they have practices to offer, and Dr. Hamill, who has conducted this important department of medical affairs for many years, would be glad to have the opportunity of opening up negotiations with physicians desiring to sell. The list of his offers will be found in the advertising columns of this journal, the complexion of which changes each month. The address is 75 Yonge St., Toronto.

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Original Communications

THE VALUE OF NITROGLYCERIN AS A PREVENT- ATIVE OF HEMOPTYSIS IN PULMONARY TUBERCULOSIS

BY FREDERICK S. MINNS, M.B., TORONTO.

Late Resident Physician the Toronto Free Hospital and King Edward Sanatorium
Weston, Ont.

There is no symptom nor complication in the course of a case of pulmonary tuberculosis which causes so much alarm to the patient and anxiety to the attending physician as hemoptysis. No matter how scanty the hemorrhage may be, it is not to be regarded lightly. In the vast majority of cases a recurrence is to be expected. And if it be at all profuse the possibility of death from suffocation, from subsequent exhaustion, or broncho-pneumonia is never to be disregarded.

The frequency of this complication may be said to be about 60 per cent. of all cases. Varying estimates are given by different authorities, ranging from 25 to 80 per cent. From the records of 4,466 cases at the Phipps Institute it occurred in 49.9 per cent. At the Adirondack Cottage Sanatorium, in 1795 cases it occurred in 44.1 per cent. Of one hundred consecutive cases admitted to the Toronto Free Hospital previous to May 1st, 1908, the records show a percentage of 47.

These figures show the frequency of this symptom as observed in institutions—a frequency which is perhaps surprising, and somewhat greater than ordinary clinical experience would suggest. A common observation, moreover, in connection with the occurrence of hemoptysis in institutions has been that they do not often occur as isolated cases.

The general rule is that they appear as it were in epidemics. This has suggested that some common factor is a causative agent, and different authorities and investigators have suggested as this common factor (1) the presence of mixed infection, or (2) atmospheric changes.

In regard to mixed infection, all that can be said as the result of the investigations that have been made is that in a certain percentage of cases of hemoptysis mixed infection has been found. In no case, however, as yet has it been proven to be a causative agent, nor have the advocates of this theory given any explanation which adequately covers those cases in which mixed infection is present over long periods without hemoptysis. Nor does any such theory explain why as high a percentage as fifty of all cases of pulmonary tuberculosis never have hemoptysis. Special work has been done along this line at the Phipps Institute, and their conclusion on the point is that, "There is little doubt but that hemoptysis is mostly due to a mixed infection. It is probable that the offending agent most frequently is the pneumococcus. The pneumococcus seems to have a peculiar faculty of bringing about an exudation of the blood."

Some hemorrhages no doubt are due to ruptured blood vessels, but even in these it is probable that micro-organisms have something to do with the softening and breaking of the blood-vessels. Aneurismal blood-vessels frequently exist in large cavities. They are subjected to severe strain in coughing, but rarely rupture. One cannot help but think that when they do rupture it is because their walls have undergone a change.

In regard to atmospheric changes, it has been the observation of the writer that hemoptyses have usually occurred in groups of from three to ten. As a matter of fact out of one hundred consecutive hemoptyses only five occurred as isolated cases. They have generally occurred when the barometric pressure was extremely low or high, or following rapid changes from one extreme to the other; when the degree of humidity was great; when the amount of precipitation was large; and when the wind was of high velocity, and frequently from an easterly direction.

For example, in May, 1908, hemoptysis occurred at the Toronto Free Hospital for Consumptives on the seventh (8 cases), the fifteenth (1 case), the sixteenth (2 cases), the thirtieth (1 case), and the thirty-first (1 case), each of which corresponds with significant atmospheric conditions.

For on looking over the records of the Meteorological Station, Toronto, which were very kindly placed at our disposal by Mr. R. F. Stupart, Director, we find: On the seventh the degree of humidity great, the amount of precipitation large, the barometric

pressure falling, and an east wind of the highest velocity for the month.

On the fifteenth and sixteenth we find the degree of humidity great, and an east wind of high velocity.

On the thirtieth and thirty-first we find the degree of humidity great, the largest amount of precipitation for the month, and a variable wind shifting from east to west.

In January, 1909, hemoptysis occurred on the seventh (1 case), the seventeenth (7 cases), the eighteenth (2 cases), the nineteenth (2 cases), the twentieth (1 case), the twenty-second (1 case), the twenty-sixth (1 case), the twenty-seventh (1 case), the twenty-eighth (2 cases), the twenty-ninth (2 cases), the thirty-first (1 case).

On the seventh we find the highest barometric pressure for the month immediately following a low pressure—a rise of .85 in the minimum pressure, and a great degree of humidity.

On the seventeenth we find a rapid fall of barometric pressure, the second largest amount of precipitation for the month, preceded on the sixteenth by a north-east wind of very high velocity.

On the eighteenth and nineteenth we find a rapid change from high to low barometric pressure, and a great degree of humidity.

On the twenty-second the hemoptysis was due to over-exertion.

From the twenty-sixth to the thirty-first we find rapid changes of barometric pressure. We find the lowest pressure and the highest velocity of the wind for the month on the twenty-ninth. We also find a very high degree of humidity, and precipitation the largest for the month on the twenty-ninth, with north and east winds of fairly high velocity. The conditions are shown on the following charts:

—May, 1908.—

Date	Barometric Pressure		Humidity Max.	Precipitation	Wind Velo	Direction	Hemoptyses
	Max.	Min.					
1	29.25	29.16	64	.01	33	N.W.	
2	29.32	29.16	92	.03	32	W.	
3	29.65	29.48	64		19	N.W.	
4	29.75	29.66	49		11	E.	
5	29.82	29.72	39		18	E.	
6	29.64	29.47	99	.38	29	E.	
7	29.38	29.21	98	.85	41	E.	8
8	29.20	29.15	78	.04	22	E.	
9	29.31	29.07	79	.08	41	N.	
10	29.45	29.39	58		29	N.W.	

THE VALUE OF NITROGLYCERIN.

Date	Barometric Max.	Pressure Min.	Humidity Max.	Precipi- tation	Wind Velo.	Direction	Hemop- tyes
11	29.42	29.30	64	.05	22	S.W.	
12	29.51	29.17	89	.04	29	S.W.	
13	29.80	29.71	95	.35	18	E.	
14	29.82	29.75	93	.15	24	E.	
15	29.77	29.72	96	.1	28	E.	1
16	29.72	29.61	98	.19	15	S.W.	2
17	29.74	29.68	85		9	W.	
18	29.74	29.45	79		25	E.	
19	29.41	29.38	97	.25	19	E.	
20	29.61	29.43	86		15	E.	
21	29.71	29.66	95	.08	23	E.	
22	29.73	29.67	93		21	E.	
23	29.85	29.75	83		12	N.W.	
24	29.92	29.87	73		10	N.	
25	29.85	29.57	70		18	E.	
26	29.53	29.35	95	.19	12	C.	
27	29.52	29.38	94	.19	12	C.	
28	29.53	29.40	88		13	E.	
29	29.51	29.45	84	.32	13	W.	
30	29.45	29.26	99	.33	13	S.E.	1
31	29.51	29.29	97	1.2	17	W.	1

—January, 1909.—

1	29.88	29.84	98		27	W.	
2	29.89	29.79	84		36	W.	
3	29.74	29.61	90		18	W.	
4	29.65	29.41	96		8	S.	
5	29.41	29.30	100	.24	17	W.	
6	29.95	29.30	88	.01	30	S.	
7	30.31	30.15	95	.01	12	N.	
8	30.18	29.96	75	.03	20	S.	
9	29.86	29.70	90	.01	21	W.	
10	29.71	29.52	98	.06	8	S.W.	
11	29.93	29.64	83	.02	22	N.W.	
12	30.17	29.84	97	.40	12	N.	
13	30.27	30.00	93	.01	25	S.	
14	29.84	29.63	97	.02	25	S.W.	
15	30.28	29.86	78		20	N.	
16	30.31	30.01	91	.20	36	N.E.	
17	29.90	29.76	88	.46	25	N.W.	7
18	30.23	30.08	95		18	N.	2
19	29.82	29.56	86		26	S.W.	2
20	29.88	29.70	88		11	S.W.	1
21	29.71	29.63	90		16	S.E.	

Date	Barometric Max.	Pressure Min.	Humidity Max.	Precipi- tation	Wind Velo.	Direc- tion	Hemop- tyses
22	29.76	29.70	99	.33	11	E.	1
23	29.61	29.49	100	.21	14	S.E.	
24	29.47	29.33	100	.01	34	S.	
25	29.58	29.44	79		37	W.	
26	29.72	29.55	79		24	W.	1
27	29.39	29.17	88	.02	33	N.W.	1
28	29.60	29.48	97		16	N.	2
29	29.27	28.93	95	.49	49	N.E.	1
30	29.40	28.94	100	.13	28	N.	
31	30.10	29.59	100		33	N.	1

It is of interest to note further that cases admitted from different parts of the province have given a positive history of hemoptyses occurring on the same dates as those here, and the records of other institutions show co-incident hemoptyses.

As an example, it may be said that on January 17th, 1909, there were:

- 4 cases at the Toronto Free Hospital.
- 3 cases at the King Edward Sanatorium.
- 3 cases at the Muskoka Hospital; and
- 2 cases from Toronto,
- 1 case from Niagara Falls,
- 1 case from Wellington.
- 1 case from Brantford,

1 case from Weston, subsequently admitted to the hospital, all of whom were positive as to the date above mentioned.

Unless these cases are to be considered as mere coincidences, they must be regarded as showing in this connection that great or rapid changes in atmospheric conditions are associated with the incidence of hemoptysis. And the explanation would seem to be that, while in health rapid changes have an appreciable but not serious effect because the body through the nervous system is able to accommodate itself to the changed conditions, in disease this power of accommodation is lacking and equilibrium is suddenly disturbed.

And whatever may be the exciting cause of the hemorrhage, it seems reasonable to suppose that the blood-pressure in the pulmonary area plays an important part in its production. About blood-pressure in the lesser circulation, either in health or disease, very little is known. Janeway, however, says that, "In the lesser circulation, as is well known, much lower pressures obtain, since this is true for the right ventricle as compared with the left. The direct estimation of blood-pressure in the pulmonary artery is very difficult, without producing markedly

abnormal conditions. The best experiments by Bentner, Lichtheim, Bradford and Dean, and Knoll, have shown values, as compared with the aortic pressure, between 1:2.6 and 1:13.4. These were in the rabbit, dog and cat. In all probability it does not average more than one-fifth the height of mean aortic pressure."

As to blood-pressure in tuberculosis, the same authority may be quoted as follows: "In tuberculosis the early studies of Marfan led him to believe that low tension is one of the commonest symptoms of phthisis, appearing even in the incipient stage."

"Since that time systematic observations on the blood-pressure of consumptives have been published from several European sanatoria, by Burekhardt, John, and Naumann, all with the Gärtner tonometer. All agree that hypotension is the rule in the more advanced cases, running roughly parallel with the impairment of general bodily vigor. Burekhardt, in rather a small series, found the pressure regularly diminished early in the second stage of the disease, and in advanced phthisis, rapid pulse and subnormal tension were invariable."

Naumann studied one hundred cases, from which all who had fever, arterio-sclerosis, heart lesions, pleural adhesions, or albumin or sugar in the urine, were carefully excluded. They were, therefore, patients with chronic, practically inactive and uncomplicated pulmonary tuberculosis. In this they differ from Burekhardt's, most of whom had an active febrile process.

Of these one hundred patients,

In sixty-nine the blood-pressure was over 130 mm. (G.).

In thirteen the blood-pressure was 115 to 130 mm. (G.).

In eighteen the blood-pressure was under 115 mm. (G.).

Naumann considers these high, normal, and subnormal values.

It does not seem possible, however, to assign any limits of blood-pressure as being the normal condition found in pulmonary tuberculosis.

The following are the results of 50 cases taken at random from patients in residence at the Toronto Free Hospital for Consumptives:

Name.	Readings.	Name.	Readings.
S. S.	124 mm.	A. G.	106 mm.
H. M.	119 mm.	J. D.	120 mm.
R. C.	100 mm.	J. P.	95 mm.
C. D.	106 mm.	C. R.	106 mm.
W. S.	120 mm.	L. L.	122 mm.
L. H.	104 mm.	L. A.	95 mm.
J. T.	110 mm.	J. B.	120 mm.
A. W.	96 mm.	E. P.	88 mm.

Name	Readings	Name	Readings
W. S.	102 mm.	L. W.	132 mm.
W. H.	108 mm.	M. D.	108 mm.
S. G.	104 mm.	R. S.	124 mm.
M. L.	108 mm.	E. D.	124 mm.
L. P.	76 mm.	M. E.	128 mm.
W. G.	140 mm.	R. D.	106 mm.
M. P.	118 mm.	J. C.	116 mm.
E. T.	88 mm.	J. M.	128 mm.
K. J.	96 mm.	E. W.	66 mm.
E. D.	96 mm.	M. G.	116 mm.
S. D.	110 mm.	E. V.	116 mm.
G. S.	120 mm.	C. P.	128 mm.
C. M.	120 mm.	C. G.	118 mm.
R. W.	134 mm.	M. M.	108 mm.
M. O.	140 mm.	R. W.	138 mm.
L. B.	130 mm.	H. M.	120 mm.
J. S.	145 mm.	E. H.	128 mm.

The following are like readings from individuals apparently in good health.

Name.	Readings.	Name.	Readings.
W. D.	125 mm.	K. J.	110 mm.
F. M.	126 mm.	M. B.	120 mm.
W. B.	132 mm.	F. H.	127 mm.
E. D.	85 mm.	M. K.	120 mm.

These show a wide range and demonstrate that the personal element is much stronger than any due to the disease.

"Naumann attempts to correlate the higher tension in sixty-nine of his cases with the tendency to hemoptysis. Of fifty-one patients who had bleeding at some time 86.2 per cent. showed a pressure above 130 mm. Of these 44 with hypertension (?) and haemoptysis, 24 were in the early stage."

Although it is at the present time practically impossible to accurately measure the blood-pressure in the pulmonary area, there are reasons for thinking that in tuberculosis it is higher than in health. We know that accentuation of the pulmonic second sound occurs very frequently in pulmonary tuberculosis. At the Phipps Institute in 732 new cases examined in one year this sign was noted in 455, or 63.37 per cent. And while it may be admitted that the exact significance of this accentuation of the pulmonic second sound in tuberculosis has not yet been satisfactorily determined, it is not unreasonable to consider it as an indication of an unusual burden on the pulmonic circulation.

We know that this accentuation is considered to occur with any pulmonary or cardiac disease which increases blood-pressure

within the pulmonary circuit, and that it may be also due in part to hypertrophy of the right ventricle resulting from a damming back of blood in the lungs in mitral disease or obstructive pulmonary disease. That the pulmonary condition was the cause in nearly all the cases referred to above is evidenced by the fact that in the same 732 cases the record of heart lesions is as follows:

Aortic stenosis	08.
Pulmonic stenosis	02.
Mitral stenosis	04.
Mitral regurgitation	15.
Mitral regurgitation and stenosis.....	03.
Dilated right heart	80.

It is not therefore an unreasonable hypothesis to consider the frequent appearance of this accentuated second sound as being due to a rise of tension within the pulmonary area, due to the resistance to the onward flow of blood through the myriads of pulmonary capillaries. But whatever may be the normal pressure in the pulmonary area in any particular patient suffering from pulmonary tuberculosis, it is evident that if hemoptysis is to occur a point must be reached at which the pressure is too great for some particular vessel to withstand. And when it is remembered that, in pulmonary tuberculosis the vessel from which a hemorrhage takes place, is probably one weakened by the progress of the disease process, it is not necessary that the pressure in that particular area be even higher than normal. It is evident, also, that the strain on a particular vessel wall may be altered by a change in the pressure either within or without the vessel. And if hemoptysis is to be prevented it is necessary, since the pressure outside the vessel wall is not under control, to endeavor, if possible, to keep the pressure within the vessel considerably below the danger point.

Much has been written and many suggestions made in regard to the treatment, immediate and subsequent, in the case of hemoptysis, but very little, if anything, has been done along the line of its prevention. It will readily be seen that this is a subject of some value, significance and interest.

Many authorities claim that it is impossible to permanently maintain a reduction of pressure in the pulmonary area by means of any therapeutic agent. This, however, is a statement which cannot very well be proven, since no experimental observations of blood-pressure in the pulmonary area have been made without the production of conditions far removed from the normal. Clinical observations, however, go to show that increase of pressure in the systemic area produces an accompanying

increase in the pulmonary area.

This is evidenced by the occurrence of isolated cases of hemoptysis due to the physical exertion, emotional excitement, or mental disturbance, in all of which cases we find an increase in the systemic pressure. Conversely, it is reasonable to suppose that a reduction in the systemic pressure would be accompanied by a reduction in the pulmonary pressure, and that therefore hemorrhagic cases with a blood-pressure perilously near the danger point might be placed in a position of comparative safety if the maximum pressure in the pulmonary area could be lowered sufficiently to allow a working margin without the danger point being reached.

One of the most useful therapeutic agents capable of producing such a result seems to be nitroglycerin.

It is said by Cushny that nitroglycerin, "which is really the trinitrate of glycerine, $(CH_2(ONO_2)CH(ONO_2)CH_2(ONO_2))$, is broken up by alkalis into glycerine, nitrates, and nitrites, and almost all the effects are due to the nitrites formed."

The action is described as follows:

"The flushing and dilatation of the arterioles of the head is found to be accompanied and followed by a profound fall in the blood-pressure. The heart is accelerated at the same time, and seems not to be responsible for the change. The cause, as has been repeatedly demonstrated, is the dilatation of the peripheral vessels, both arterioles and veins widening under the influence of the drug; the vessels of the abdominal organs and the head are more affected than those of the extremities.

Its action commences very soon after its administration, and lasts much longer than that of amyl nitrite.

Erythrol tetranitrate and mannitol hexanitrate act more slowly, and the fall of pressure is more gradual, and lasts longer than under any others of the series."

It is generally considered that nitroglycerin is extremely poisonous, and that therefore it is given in exceedingly minute doses. With this precaution, however, it can be given over long periods without any apparent injurious effects. For example, 1/100 of a grain may be given four times a day for weeks, or 1/400 of a grain may be given for months.

CASE No. 1.

Time.	Readings on First day	Time.	Readings on Second day
9.15 a.m.	120mm.	9 a.m.	128mm.
9.45 a.m.	108mm.	10 a.m.	112mm.
10.15 a.m.	110mm.	11 a.m.	112mm.

Time.	Readings on First day.	Time.	Readings on Second day.
10.45 a.m.	102mm.	12 a.m.	116mm.
11.15 a.m.	108mm.	1 p.m.	126mm.
11.45 a.m.	116mm.	2 p.m.	110mm.
2.00 p.m.	110mm.	3 p.m.	110mm.
3.00 p.m.	116mm.	4 p.m.	108mm.
4.00 p.m.	116mm.	5 p.m.	114mm.
5.00 p.m.	110mm.		
Time.	Readings on Third day.	Time.	Readings on Fourth day.
9.00 a.m.	126mm.	6 a.m.	118mm.
10.00 a.m.	112mm.		
11.00 a.m.	110mm.	9 a.m.	128mm.
12.00 a.m.	114mm.		
1.00 p.m.	118mm.		
2.00 p.m.	108mm.		
3.00 p.m.	116mm.		
4.00 p.m.	114mm.		
5.00 p.m.	118mm.		

Case 1.—This is a record of an “up” patient, whose average blood-pressure at 10 a.m. was found to be 124mm. He had breakfast in bed on the morning on which the record begins, and remained in bed until the morning of the fourth day. Nitroglycerin 1/100 gr. was given after the readings charted at 9.15 a.m., 12.45 a.m., 5 p.m., and again at 9 p.m. the first day. The same dose was given on the second and third days at 9 a.m., 1 p.m., 5 p.m., and 9 p.m., after the pressure was recorded.

The extreme drop at 10.45 a.m. on the first day must have been due to some extraneous cause, for all cases on treatment and also all control cases show the lowest record at this hour.

The rise at 1 p.m. on the second day must have been due also to some extraneous cause, for all control cases show a similar elevation.

The record on the fourth day was taken on awakening at 6 a.m. No nitroglycerin had been taken since 9 p.m. the previous night. Patient got up for breakfast, and the 9 a.m. record was taken afterwards.

CASE No. 2.

Time.	Readings on first day.	Time.	Readings on second day.
9.15 a.m.	124mm.	9 a.m.	114mm.
9.45 a.m.	106mm.	10 a.m.	104mm.
10.15 a.m.	106mm.	11 a.m.	110mm.
10.45 a.m.	96mm.	12 a.m.	110mm.
11.15 a.m.	98mm.	1 p.m.	118mm.

Time.	Readings on First day	Time.	Readings on Second day
11.45 a.m.	110mm.	2 p.m.	108mm.
12.15 p.m.	108mm.	3 p.m.	110mm.
12.45 p.m.	112mm.	4 p.m.	108mm.
2.00 p.m.	114mm.	5 p.m.	110mm.
3.00 p.m.	112mm.		
4.00 p.m.	114mm.		
5.00 p.m.	112mm.		
5.00 p.m.	110mm.		
Time.	Readings on third day.	Time.	Readings on fourth day.
9.00 a.m.	118mm.	6 a.m.	106mm.
10.00 a.m.	112mm.		
11.00 a.m.	108mm.	9 a.m.	124mm.
12.00 a.m.	112mm.		
1.00 p.m.	116mm.		
2.00 p.m.	108mm.		
3.00 p.m.	114mm.		
4.00 p.m.	112mm.		
5.00 p.m.	112mm.		

Case 2.—The same remarks hold for this case as in No. 1. This patient has the disease in a more active form, which might account for the wider fluctuations.

CASE No. 3.

Time.	Readings on first day.	Time.	Readings on second day.
9.15 a.m.	126mm.	9 a.m.	104mm.
9.45 a.m.	114mm.	10 a.m.	102mm.
10.15 a.m.	104mm.	11 a.m.	104mm.
10.45 a.m.	98mm.	12 a.m.	102mm.
11.15 a.m.	100mm.	1 p.m.	106mm.
11.45 a.m.	104mm.	2 p.m.	110mm.
12.15 a.m.	102mm.	3 p.m.	102mm.
12.45 a.m.	104mm.	4 p.m.	104mm.
2.00 p.m.	104mm.	5 p.m.	106mm.
3.00 p.m.	104mm.		
4.00 p.m.	102mm.		
5.00 p.m.	104mm.		
Time.	Readings on third day.	Time.	Readings on fourth day.
9.00 a.m.	108mm.	6 a.m.	104mm.
10.00 a.m.	106mm.		
11.00 a.m.	104mm.	9 a.m.	106mm.
12.00 a.m.	104mm.		
1.00 p.m.	108mm.		

Time.	Readings on Third day
2.00 p.m.....	106mm.
3.00 p.m.....	104mm.
4.00 p.m.....	106mm.
5.00 p.m.....	104mm.

Case 3.—This is a record of a control case not on treatment. The average blood-pressure was previously found to be 104mm. The patient is an advanced case, with fairly active febrile process.

CASE No. 4.

Time.	Readings on first day.	Time.	Readings on second day.
10.00 a.m.	68mm.	10 a.m.....	84mm.
11.00 a.m.	70mm.	11 a.m.....	88mm.
12.00 a.m.	70mm.	12 a.m.....	88mm.
2.00 p.m.	68mm.	2 p.m.....	86mm.
3.00 p.m.	78mm.	3 p.m.....	88mm.
6.00 p.m.	78mm.	6 p.m.....	92mm.

Case 4.—This is a record of a case which had been taking 1/100 gr. of nitroglycerin three times a day for twelve weeks. The nitroglycerin was discontinued the previous day. The first record shows a fluctuation between 70 and 78. Not until seven days later did the readings maintain the rise as shown, and then fluctuated between 84 and 92. Cases 3 and 4 are patients confined to bed.

CASE No. 5.

Time.	Readings
0 min.	120mm. 110mm. 105mm.
10 min.	105mm. 105mm. 108mm.
20 min.	110mm. 110mm. 110mm.
30 min.	110mm.

Case 5.—This is a record showing the rapid fall and subsequent rise of blood-pressure when a hypodermic tablet of 1/100 grain of nitro-glycerin is placed on the tongue of a patient.

The following routine treatment of hemoptysis, including nitroglycerin, has been found very efficacious:

At the Time of Hemoptysis.

Morphine Sulphate, gr. 1/4, hypodermically, only if the hemorrhage is profuse, or in case of extreme nervousness.

Absolute Rest.—Both of mind and body.

No talking.

Semi-recumbent Position.

Chipped Ice, Salt, or Snow.

The following are also sometimes of value:

Aconitine, gr. 1/200.

Atropine, gr. 1/50-1/25.

Amyl Nitrite m.v.

Ligation of the extremities.

During subsequent 48 hours.

Nitroglycerin, gr. 1/100, q.q.h., by mouth.

Calcium Chloride, gr. xx. q.q.h., for three days only;
or lactate.

Purgative, Calomel Sod. bicarb. gr. v. Saline.

Absolute rest in semi-recumbent position.

Diet—Cold milk, gelatine.

During remainder of first two weeks.

Nitroglycerin, as before.

Rest.

Saline quotid., a.m., a.c.

Diet—light.

Subsequently.

Nitroglycerin, gr. 1/400, q.q.h.

Laxative, if necessary.

A brief history of a few cases which have been treated, using nitroglycerin as a preventative.

Case 1.—Male, age 30, white, clerk, marked debility, cough troublesome in the evening, with about two ounces of expectoration, poor sleeper, appetite fair, bowels constipated.

Temperature, 100.2, pulse 120, respirations 28.

Weight 146—a loss of 14 pounds since August, 1907.

“Always had a cough.” For past two years had enjoyed best health to his recollection. Caught cold November, 1907. Had la grippe for two weeks, followed by sciatica for six weeks. From the beginning of 1908 until admission in March he was under the care of his physician for recurring hemoptyses, having had 18 or more in all.

Treatment and progress. Admitted March 13th, 1908.

March 14th, 1908.—Nitroglycerin, gr. 1/100, q.q.h. Mist.

Mag Sulph., one ounce, t.i.d., a.c.

March 15th.—Color in sputum.

March 19th.—Color in sputum.

March 23rd.—Hemoptysis, quantity measurable in ounces.

March 25th.—Hemoptysis, quantity measurable in ounces.

March 30th.—Slight hemoptysis, quantity measurable in drachms.

The same treatment was continued, except that on July 10th the dose of nitroglycerin was reduced to gr. 1/400. No more signs of blood appeared. Patient left institution in December. Has been at work since the beginning of January, 1909, and has continued the treatment. No more hemoptyses.

Case 2.—Female, age 19, white, domestic, debility slight, cough only troublesome in the morning, with about one ounce of expectoration, bowel movements irregular, menstruation ceased two months ago.

Temperature 98.2, pulse 100, respiration 28.

Weight about 100 pounds—twenty-eight pounds less than her best weight three years ago.

Mother and one sister dead of tuberculosis. Another sister, age 22, has the disease, and has had hemoptyses. She is now a patient in the Toronto Free Hospital.

The first noticeable symptom of the disease was the occurrence of hemoptysis in April, 1908. Since the first she has had twelve, the last before entrance being August 10th. The amount of blood lost has varied in amount, the largest amount being about ten ounces.

Admitted August 17th, as a bed patient. Because of her quiet disposition she was not put on routine treatment for hemoptysis, although she had a hemorrhage the day after admission. Calomel gr. Sod. Bicarb. gr. v., and a Saline being ordered, and to be given cold light diet. On August 24th, hemoptysis occurred. Was now ordered a saline quotid., a.m. a.c. On August 30th hemoptysis again occurred. Nitroglycerine, gr. 1/100, q.q.h., was now ordered. September 21st, sputum was colored, and for three days Calcium Chloride gr. xx. q.q.h., was given.

On October 4th, she began keeping her own "day" chart, as her condition had slightly improved, and she was allowed up for part of each day. The dose of nitroglycerin was now reduced to gr. 1/400, q.q.h. Slight traces of blood appeared on three occasions, but no special treatment was ordered, for it was hoped that the dose of nitroglycerin would be sufficient to prevent more serious trouble. On December the 9th, she attended a lecture given downstairs. On returning to her room hemoptysis occurred, the amount of blood lost being about six ounces. Was ordered Calomel gr. ; Sod. Bicarb. gr. v., and routine hemorrhage diet. On December 17th and 18th hemoptysis occurred four times, the total amount of blood lost being about ten ounces. Calcium Chloride gr. xx., q.q.h., was given for three days, and the dose of nitroglycerin was again increased to

gr. 1/100, q.q.h., which has since been given.

No hemoptysis has since occurred, although the course of the disease has continued progressively active.

Case 3.—Male, age 33, white, janitor, debility slight, cough troublesome at times, with about six ounces of sputum daily.

Temperature 98, pulse 94, respiration 24.

Weight 123 on admission, 147 on discharge.

Gave a history of the occurrence of hemoptysis about twenty times during the years 1902, 1903, 1904, and 1905.

Admitted December 13th, 1907. During February and April slight hemoptyses occurred. Was ordered Calcium Chloride gr. xx., q.q.h., and Saline quotid., a.m., a.c.

On May 7th a slight hemoptysis occurred. Was ordered routine treatment for hemoptysis. No recurrence.

Patient was discharged July 16th; condition very much improved.

Case 4.—Male, age 47, white, peddler, debility marked, cough troublesome in morning, with about two ounces of expectoration.

Temperature 99, pulse 68, respiration 24.

Weight two months ago 117, average weight 155, on discharge 125.

Was admitted December 5th, 1908, from St. Michael's Hospital, where he had been for eight weeks, for tubercular pleurisy. Gave a previous history of two slight hemoptyses in November. Large cavity formation found on examination in the apex of the right lung.

December 26th, was able to be up part of each day.

Hemoptysis occurred on January 17th, 1909, when he was ordered routine treatment for hemoptysis.

Patient went home March 16th, condition improved.

Of the eight cases which had hemoptysis on the 7th of May, 1908, there were four in residence on January 31st, 1909.

One of these, who had a previous history of over twenty hemoptyses during the years 1902, 1906, 1907 and 1908, had continued taking gr. 1/400 of nitroglycerin four times a day, and only on one occasion has had a trace of color.

Another, who had a previous history of six hemoptyses during the years 1902, 1906 and 1908, has taken gr. 1/400 of nitroglycerin four times a day, and has never had more than slight traces.

SUMMARY.

1. While there may be other elements in the production of hemoptysis, it is evident that blood-pressure in the pulmonary area plays an important part.

2. Estimation of blood-pressure in the pulmonary area cannot ordinarily be made experimentally.
3. Clinical observation, however, goes to show that there is a relation between pulmonary pressure and systemic pressure.
4. Such preparations as nitroglycerine are capable of reducing blood-pressure in the systemic system. And by their use it would seem to be possible to keep the pressure in the pulmonary area in any particular case reasonably below the danger point.
5. The drug should be administered in small doses, and may be continued over long periods.
6. The results obtained here have been the result of the study of over six hundred cases of pulmonary tuberculosis in residence, and the treatment as carried out for nearly two years has given time to prove the efficiency of the same.
7. It would seem to be indicated that this drug should be administered in the morning some time before the hour of rising, and subsequently at, say 7.30 a.m., 11.30 a.m., 4.30 p.m., and 7.30 p.m., in order to have the result produced before the blood-pressure is raised by the exertion incident to toilet, meals, etc.
8. When gr. 1/100 of nitroglycerin will reduce the blood-pressure 15mm. in less than 10 minutes, as shown by the chart, page —, the same dose, given four times a day for say two weeks, should be sufficient to maintain a lower pressure than the individual's normal.
9. While the administration of nitroglycerine has not proven to be an absolute preventative, still, in the large majority of cases, with a previous history of hemoptysis, or the occurrence of the same while in residence here, it has been clearly proven to be efficacious in reducing the frequency of the complication, and in lessening the amount of blood lost when it does occur.

To Dr. W. J. Dobbie, Physician-in-Chief of the hospitals for advanced tuberculosis at Weston, the gratitude of the writer is extended for his courtesy and assistance, and in providing free access to the records and other data that have made this article possible.

THE RELATION TO THE EYE OF DISEASES IN THE NOSE, THROAT AND EAR—INTRA-OCULAR DISEASE.*

J. T. DUNCAN, M.D., TORONTO.

A prominent United States oculist has remarked that some fifteen or twenty years ago, specialists usually took as their field action the Eye, Ear, Nose and Throat. Of late years, however, he says that the tendency has been towards separation, and for each man to take but one of these departments.

Now, he says, the tendency is not to unite these specialties again, but, recognizing their interdependence, to more frequently consult, or rather, more frequently to refer suitable cases—the oculist to the rhinologist, or otologist, or vice versa, as cases require.

The reason for the changing attitudes is not far to seek. Up to a few years ago there seemed very little connection, for instance, between diseased conditions in the nose (and its accessory sinuses) and the eye or ear. But now, thanks to the labors of many rhinologists and oculists, the interdependence of the diseases in all of these parts becomes more and more manifest.

One of the most important of the studies in this connection is one which was communicated to the British Medical Association in 1904 by Professor Onodi, of Buda-Pesth. I do not purpose to go exhaustively into his work, leaving that for others to do; but I must summarize some of his results, from the standpoint of the oculist. The title of his paper was, "On the Disturbances of Vision and Development of Blindness of Nasal Origin, Induced by Disease of the Posterior Accessory Sinuses." Having found in the course of his experience and study evidence that blindness may be caused by disease of the accessory nasal sinuses, he first issued a circular letter to the leading clinicians and specialists of Europe. In this he asked four questions, but they may be summarized in the following way. He asked of them if they had observed cases in which inflammation of the accessory sinuses has produced optic neuritis or blindness. Some half-dozen replies are quoted, all answering in the negative. Up to 1904, then, the fact that nasal disease could be a cause of blindness was almost unknown. But Professor Onodi showed that the sphenoid or the ethmoid sinuses may be only separated from the optic nerve by bone so thin as to be diaphanous; that these sinuses may be full of pus; that where no

*Read at meeting of Academy of Medicine, Toronto.

drainage for the pus is provided it may so bulge the thin walls of the sinus as to press upon and injure the optic nerve. As a matter of fact, Professor Hirschberg's material showed that almost half the cases of one-sided optic neuritis are traceable to nasal disease. Mendel remarks that one-sided choked disc is mostly due to an affection of the orbit, double-sided mostly to an intracranial cause. Lapersomme insists on the characteristic of one-sided disease. He says, "Optic neuritis is rarely seen in inflammation of the frontal sinus, more often in inflammation of the maxillary or ethmoid, but it is produced, if at all, by inflammation of the sphenoidal sinus. A chief characteristic of neuritis due solely to sinus inflammation is that it is unilateral. . . ."

A double edematous neurites ought rather to make one think of an intracranial process. While Onodi thus calls attention to the fact that empyema of the accessory sinuses is a cause of optic neuritis, he also admits that it is not the only cause, and also calls attention to cases in which empyema of these sinuses has produced no effect upon the sight. In summing up, he says, "A causal connection and cure after treatment are asserted in the cases mentioned by Lor, Coppez, Hajek, Fleiss, Hoffman, Mendel, Halstead and Sargent F. Snow. Causal connection confirmed by necropsy are established in the cases of Duplay, Horner, Panas, Rouge, Russell, Raymond, Ottman, Demarquay and Voissius. In regard to the symptoms shown by such cases when they are brought to the consulting-room, Posey remarks that they closely resemble cases of eye strain, therefore refraction is usually advised. In some cases, he remarks, this is a distinct advantage to the patient, when atropin is used to dilate the pupils. The dilating action is of no advantage, but he says the atropin sometimes dries up the secretions in the sinus, and thus cures the condition.

Cure not taking place, however, dimness of vision (unilateral) would be noticed, vertigo and headaches. On ophthalmoscopic examination, the edges of one disc would show a slight "veiling" or even a woolly appearance, while the veins would show moderate distention. Concentric narrowing of the field of vision would now be noticeable. Probably now the case would be referred to a rhinologist for further examination, and in many of the cases, if pus is found, drainage of the sinuses completely relieves the ocular condition.

Other nasal conditions, however, may produce disease of the eye.

In one case, a hypertrophied turbinate was suspected to be the cause of optic neuritis, and on the removal of the turbinate the neuritis disappeared. In a case of nasal polypus, which was

injected with carbolic acid, iritis supervened, with optic neuritis, which later resulted in optic atrophy. One case of choroiditis was cured by drainage of the sinus, and Dr. Risley claims that not infrequently sinusitis does cause choroiditis, due, as is generally supposed to the impediment to the circulation caused by pressure upon the optic nerve. In regard to the extraocular muscles, this will be dealt with later.

The cornea may show herpetic blisters as a result of disease in the nasal chambers, affecting a portion of the fifth nerve there.

The pupil, again, may be affected by nasal disease. If there be an optic neuritis, and consequently a loss of the light sense, there will be slight dilatation, probably unilateral. If, however, the sinusitis is severe, the walls bulging from the contained pus, the third nerve may be paralyzed as its lower branch passes towards the ciliary ganglion, thus causing a widely-dilated pupil.

Asthenopia, headaches and neuralgias may be caused by sinusitis.

I have now to ask your attention to a remarkable case which shows the intimate connection of the nerve supply to parts of the nasal chambers and to the eye.

The sphenopalatine (Meckels) ganglion we know lies close to the sphenopalatine foramen. Owing to its position in the nasal chambers we can understand that inflammatory conditions in the chambers may at any time spread to and affect this ganglion. Greenfield Sluder (Trans. Laryng. Soc., 1904) reports a case of glaucoma which took on an acute access of pain, apparently caused by an extension of an inflammatory nasal condition to the ganglion. A 50 per cent. solution of cocaine was applied over the ganglion, and the pain in the glaucomatous eye soon ceased. There seemed to be no doubt that this was the cause and effect.

Lastly, I refer to an article by Hill Hastings (Trans. Am. Laryng., Rhinol. and Otological Soc., 1906), in which he claims that nasal disease produces:

1. Ptosis.
 2. Edema of the eyelids.
 3. Squint.
 4. Pain in the eye.
 5. Disturbances of vision.
 6. Retro-bulbar neuritis.
- Passing over diseases of the throat.
Ear diseases.

Irritation of the external auditory canal and cavity of the tympanum produces blepharospasm often. On the other hand, Rampoldi often checked blepharospasm of this kind by dropping cocaine into the ear.

Baginski produced, in 1881, nystagmus by injecting warm water into the cavity of the tympanum. Kipp observed three cases of nystagmus due to purulent inflammation of the middle ear. Chronic catarrh of the middle ear has often been noted as the cause of impairment of the activity of vision. It is also a curious fact that in two cases where an iridectomy was done an improvement of hearing was noticed. In the one case, the iridectomy was done for glaucoma, in the other for leucoma of the cornea. Kipp reports two cases of metastatic panophthalmitis in aural suppuration.

Nystagmus may only be named; it cannot be considered here. It is not a symptom of cochlear disease, only of vestibular. The symptoms of vestibular disease are:

- (a) Dizziness.
- (b) Loss of equilibrium.
- (c) Nystagmus.

Ocular nystagmus shows slow and regular movements; aural nystagmus has a quick and a slow component; it is named from its quick component.

PROPOSED STERILIZATION OF CERTAIN DEGENERATES

BY ROBT. RENTOUL, M.D.

It will interest those who agree with my proposal, made in 1903, that one way of lessening the ghastly total of degenerates would be to so surgically operate upon them that they could neither beget nor conceive. Already two States in America have adopted my proposal.

On January 1st, 1909, there were in England and Wales no fewer than 128,787 officially certified insane; and an increase of 2,703 in the year. But there are a great many at large who are not "officially" reported. In 1859 there were only 36,762 certified insane. The insane rate since then has increased by 250 per cent., while the population has increased by 81 per cent., and evidently—judging by our "do-nothing" policy—we are quite content to go on marrying and breeding more and more degenerates, and to expend yearly millions of pounds sterling upon these—an expenditure which gives us no results.

It may be that new proposals in an *old* country are always the product of an ill-balanced mind, or are to be labeled heretical. But on February 10th, 1907, the Legislature of the State of Indiana passed the following Act:

An Act entitled an Act to prevent procreation of confirmed criminals, idiots, imbeciles, and rapists—providing that superintendents or boards of managers of institutions where such persons are confined shall have the authority and are empowered to appoint a committee of experts, consisting of two physicians, to examine into the mental condition of such inmates.

Whereas heredity plays an important part in the transmission of crime, idiocy, and imbecility;

Therefore, be it enacted by the General Assembly of the State of Indiana that on and after the passage of this Act, it shall be compulsory for each and every institution in the State entrusted with the care of confirmed criminals, idiots, rapists, and imbeciles, to appoint upon its staff, in addition to the regular institution physician, two skilled surgeons of recognized ability, whose duty it shall be, in conjunction with the chief physician of the institution, to examine the mental and physical condition of such inmates as are recommended by the institutional physician and board of managers.

If, in the judgment of this committee, procreation is inadvisable, and there is no probability of improvement of the mental condition of the inmate, it shall be lawful for the surgeons to perform such operation for the prevention of procreation as shall be decided safest and most effective. But this operation shall not be performed except in cases that have been pronounced unimprovable.

Again, on August 12th of this present year, the State Legislature of Connecticut enacted:

An Act concerning operations for the Prevention of Procreation. Be it enacted by the Senate and House of Representatives in General Assembly convened:

Section 1.—The directors of the State Prison and the superintendents of State Hospitals for the Insane at Middletown and Norwich are hereby authorized and directed to appoint for each of said institutions, respectively, two skilled surgeons, who, in conjunction with the physician or surgeon in charge at each of said institutions, shall examine such persons as are reported to them by the warden, superintendent, or the physician or surgeon in charge, to be persons by whom procreation would be inadvisable.

Such board shall examine the physical and mental condition of such persons, and their record and family history, so far as the same can be ascertained, and, if in the judgment of the majority of said board, procreation by any such person would produce children with an inherited tendency to crime, insanity, feeble-mindedness, idiocy, or imbecility, and there is no probability that the condition of any such person so examined will improve to such an extent as to render procreation by such person advisable, or, if the physical or mental condition of any such person will be substantially improved thereby, then the said board shall appoint one of its members to perform the operation of vasectomy or oophorectomy, as the case may be, upon such person. Such operation shall be performed in a safe and humane manner, and the board making such examination, and the surgeon performing such operation, shall receive from the State such compensation for services rendered as the warden of the State Prison or the superintendent of either of such hospitals shall deem reasonable.

Section 2.—Except as authorized by this Act, every person who shall perform, encourage, assist in or otherwise promote the performance of either of the operations described in Section 1 of this Act, for the purpose of destroying the power to procreate the human species; or any person who shall knowingly permit either of such operations to be performed upon such person—

unless the same be a medical necessity—shall be fined not more than one thousand dollars, or imprisoned in the State Prison not more than five years, or both.

There need be no objection to such an operation as is here suggested. It is very simple, practically painless, makes no difference at all to the bodily functions, and has no ill-effects of any kind. It prevents nothing but the power to procreate. It is the outcome of modern scientific knowledge, and must not be confounded with older and much more drastic methods.

In 1905 the House of Representatives and Senate of the State of Pennsylvania passed a sterilization bill, but the State Governor refused to sign it, holding that further time was necessary. But from what correspondents in the States tell me, there is every likelihood of many States following the good example of Indiana and Connecticut.

In this country the cry is often, "Let me alone"; "Don't worry us"; "Wrongs will right themselves"; or "I needn't worry; things will last my time." Such a mixed policy of hypocrisy and slavish desire to tread the beaten track will not work for good.

We howl about the increase of paupers. Yet we allow the pauper to leave the workhouse to get married. We howl about the increase of criminals. Yet we allow criminals to marry and to beget more criminals. And we howl about the increase of insanity and the feeble-minded. Yet we allow these to marry and to beget offspring fully qualified to perpetuate the weak-mindedness of their progenitors. Surely a noble and worthy national policy!

Some time ago I called attention to the fact that five feeble-minded women had given birth to fifteen feeble-minded infants.* Later still, Dr. Potts stated that in one workhouse sixteen feeble-minded women had given birth to 116 idiot children. Dr. Branthwaite, in his annual report (for 1905) on Inebriate Homes, states that 92 habitual inebriate women had had 850 babies.

What can these children become? More inebriates; more degenerates; because of women admitted 200 were found to be suffering from mental defect.

If we can, by sterilizing a large number of mental degenerates, people classified as habitual criminals, and vagrants, lessen the total of this world's suffering; lessen the number of children so cursed and weighted down by parental defects that they can never become useful citizens; and if we can lessen the unwise sum of money now expended upon the upkeep of our motley

*See "Race Culture or Race Suicide." 2nd Ed.

civilization—using it for better purposes—then let us give up the useless policy of breeding and cultivating a species of British subjects who will not only be a heavy millstone round our necks, but will go on breeding more degenerates to require more asylums and far greater expenditure.

Is it not time some very definite action in this great national question—for it affects each one of us—of needlessly breeding more and more degenerates, was taken? Our present criminal law is based upon hypocrisy and cant, and has no reference to the unnecessary suffering of so many poor degenerates.

Liverpool, England, Dec., 1909.

"A RESUME OF THE MILK CAMPAIGN IN THE UNITED STATES AND CANADA."

BY DR. CHAS. J. HASTINGS, TORONTO.

Chairman of the C.M.A. Milk Association

Mr. President and Members of the Hamilton Medical Society,—

The name of Dr. Henry L. Coit, of Newark, N.J., I am sure, is familiar to all of you as having been the first to conceive the idea by which pure milk might be obtained independent of either State or municipal legislation.

After two years' persistent efforts to obtain State or municipal assistance, in an effort to bring about a radical reform in the production and handling of milk, the Milk Commission of the Medical Society of New Jersey abandoned their efforts, after having received the following communication from the secretary of the State Board of Health:

"There is far more danger of weakening the law than there is prospect of its being made more stringent. It would afford us pleasure to be of service in this direction, but we really do not see how we can be at present."

Hence it was that necessity became the parent of the offspring afterwards christened "Certified Milk" by Dr. Henry L. Coit, and the first meeting of the Essex County Medical Society Milk Commission was held at the residence of Dr. T. Y. Sutphen, Newark, on the evening of April 15th, 1893. There the professional experts were appointed, and the machinery which has done such effective work was devised and adopted, the details of which are too familiar to all of you to require any further comment. The various commissions that had been formed between this and June, 1907, organized themselves into a body known as the American Association of Milk Commissions, and held their first annual meeting at Atlantic City on June 3rd, 1907, at which reports were presented from the Milk Commissions of twelve cities in the Union. Papers were presented on various phases of the best methods to be adopted in this great national campaign. The consolidation of the various milk commissions into the American Association of Milk Commissions was, obviously, for the purpose of mutual benefit, as set forth in the following definition:

"The purpose of this Association shall be to federate and bring into one compact association the Medical Milk Commissions of the United States, to exchange views and to adopt uniform methods of procedure in the work of the Medical Milk

Commissions; to fix chemical and bacteriological standards; to determine the scope of medical and veterinary inspection, and to foster and encourage the establishment of Medical Milk Commissions in other cities."

In June, 1908, this Association held its second annual meeting in Chicago, and in June, 1909, held their third annual meeting at Atlantic City.

While this association of milk commissions is not a part of the American Medical Association, yet they always meet at the same time and place as that Association.

Up to the present the Association has limited its work to the production of certified milk only. At the meeting in June last, at Atlantic City, there were fifty-six commissions in the United States. The executive of the Association decided to extend the franchise to the Dominion of Canada, and made the Milk Commission of the Canadian Medical Association and that of the Academy of Medicine, Toronto, component parts of the Association.

It is important to note that, notwithstanding the very admirable, well-organized work done by this Commission, that of the entire amount of milk consumed in the United States last year not quite one-tenth of 1 per cent. came up to the standard set for certified milk, and of the two million quarts consumed daily in New York City, only 16,000 quarts came up to the standard, or a little less than 1 per cent.

WORK BEING DONE IN CANADA.

On June 10th, 1908, at the forty-first meeting of the Canadian Medical Association, held in Ottawa, on recommendation of the joint sections on Public Health and Laboratory Workers, a commission was appointed by the executive of the Association, to be known as the Canadian Medical Association Milk Commission, composed of representatives from various parts of the Dominion, to act in conjunction with the various boards of health in enquiring into the milk supply of the various cities and towns throughout the Dominion, and to endeavor to secure such legislation as would warrant them or each municipality in establishing a system of rigid inspection, and the adoption and enforcing of such rules and regulations as would be found necessary. In October, 1908, a milk commission was appointed by the Academy of Medicine, Toronto, which has devoted its time exclusively to the production of certified milk for sick babies. Contracts have been entered into with three of the leading dairies supplying the city, from which this milk can be obtained by all those willing to pay the price for it. The amount of Certified Milk consumed at present in Toronto per day is about — quarts, which is sold at fifteen cents per quart.

In June, 1909, as you are all aware, a Milk Commission was appointed by the Ontario Legislature, as the result of a very able address delivered to that body by Mr. W. K. McNaught, M.P.P. I have reason to believe that this Commission has done most thorough and valuable work, and we are looking forward with interest to the presenting of their report, which, we trust, will be a valuable medium of education on this all-important subject, as well as result in the securing of such legislation for the municipalities as will enable them to have complete control of their milk supply. I have been very pleased to learn from your able President, Dr. Hutton, of the very valuable work done by your Commission here in Hamilton during the past summer. It certainly reflects a great deal of credit on those connected with it.

Our Commission has held twenty-six meetings, all of which have been well attended, and a marked interest manifested by the various members. As there were enough members in Toronto to constitute a quorum, we have been able to hold regular meetings, notice of which has been sent to the various members throughout the Dominion, and all members have been sent a synopsis of the proceedings accompanied by a request for comments and also for suggestions. The following committees have been appointed: First, a committee to prepare rules and regulations, for governing the production and delivery of milk. This committee secured literature from all the cities in the United States where efforts were being made to improve the milk supply, and where city ordinances were in force. From this accumulation of literature, rules and regulations have been compiled. Second, a Committee on Local Legislation, to take up the matter of milk legislation with the Local Legislature. This committee conferred with Mr. McNaught on different occasions, when he was preparing his address for the House, and went carefully over the different phases of the milk problem from the standpoint of both producer and consumer. Mr. McNaught expressed himself as being thoroughly in accord with the work done by the Commission. On November 18th, 1908, our Commission waited on and interviewed the Hon. Mr. Hanna, Provincial Secretary for the Province of Ontario, relative to securing the laboratories of the Provincial Board of Health for the use of the Commission in the analysis and bacteriological examination of samples of milk. Mr. McNaught was present and introduced the delegation. Mr. Hanna graciously acceded to the request, and promised the use of the laboratories for the purposes above indicated, adding that he did not know of any better use that the laboratories could be put to. Third, the

Committee on Federal Legislation. Representatives of this committee had a conference with Prof. McGill, of the Inland Revenue Department, Chief Analyst for the Dominion, re definition of Certified Milk and Pasteurized Milk, to be incorporated in the Food Adulteration Act. Again, on July 12th, a second deputation of the Commission went to Ottawa, and through the kindness of Prof. McGill, secured an interview with Mr. Gerald, Deputy Minister of Inland Revenue. The deputation was most cordially received by the Deputy Minister and Prof. McGill, who promised hearty co-operations, and assured us that the Governor-in-Council would include Certified and Pasteurized Milk among their list of articles in the public proclamation of food standards. The Deputy Minister asked that your Commission forward to the Department its definition of Pasteurized and Certified Milk, and if they met with the approval of Prof. McGill, would no doubt be accepted by the Governor-in-Council. The following definitions were promptly forwarded:

(1) Certified Milk is milk examined and guaranteed by any local Board of Health, or incorporated society or association of legally qualified medical practitioners. First, to be taken from cows semi-annually subjected to the tuberculin test, and found without reaction; all doubtful or suspicious cases to be excluded from the herd.

(2) To contain not more than 10,000 bacteria per C.C. in the Summer, and 5,000 in Winter, on delivery to the consumer.

(3) To be free from pus, blood, disease-producing germs, preservatives or other foreign matter, and not to have been heated in any way or frozen.

(4) It shall contain at least 12 per cent. of total solids, of which from $3\frac{1}{2}$ to $4\frac{1}{2}$ must be butter fat.

(5) It must be cooled to a temperature of 45 degrees within one-half hour after milking, and shall be kept at a temperature not higher than 45 degrees until delivered to the consumer.

Pasteurized Milk is milk which has been subjected, in a closed vessel, to a temperature of 150 F. for twenty minutes, or 140 to 145 for thirty minutes, and immediately thereafter refrigerated to at least 45, and kept to that temperature until delivered to the consumer.

In May, on invitation of Mr. John Ross Robertson, a deputation of the Commission accompanied him as his guests to New York City to inquire into the advantages and disadvantages of Pasteurization, and assist him in the choice of a Pasteurizing plant for the Children's Hospital, of Toronto. We spent two strenuous days in interviewing the leading experts on the milk problem in that city, among which were Thomas L. Darlington,

Commissioner of Health, New York City; Dr. Alfred F. Hess, Research Laboratory of the Board of Health of New York City; Dr. Charles E. North, Consulting Sanitary Expert; The Nathan Strauss Laboratories; The Walker Gordon Laboratories; Mr. Wilbur Philips, Chairman New York Municipal Milk Commission and Combined Charities; the Children's Hospital, New York City.

The work being done by Dr. Darlington and his staff is an education of itself, well worth a trip to New York City by anyone interested in this all-important life-saving problem. Dr. Darlington informed us that when they first began their inspection it was not unusual for them to lose a meal, as the conditions found in many cases were too awful to describe. Hundreds of cattle were ordered to be destroyed. Their city health ordinances require that all milk delivered in New York City must be kept at a temperature of not more than 50, but they experience great difficulty in inducing the railways to put on refrigerating cars. They got over this difficulty, however, by their staff examining a large shipment of milk, and, finding that the temperature was between 60 and 70, they dumped 28,000 quarts of this milk into the Hudson in one morning. The indignation of the producers was so aroused that they immediately demanded compensation from the railways. All sorts of tactics have been resorted to in order to detect uncleanly methods. On one occasion, when visiting a dairy farm, suspicion was aroused as regards the conditions of the milk utensils. They were assured, however, that they had all been carefully washed, and would again be washed and sterilized before being used. While Dr. Darlington was talking to the dairyman, one of his men sprinkled a few grains of carmine in the bottom of some of the milk cans. The consequence was that the following day they had a large shipment into the city of beautiful pink milk. The dairyman demanded to know what right they had to tamper with his milk cans. Dr. Darlington's reply was, "What right have you to violate our milk ordinances?" Replying to a query re Municipal Pasteurization, he said: "I am afraid to undertake it in a city the size of New York, on account of the abuse it has been subjected to; but," said he, "we send out an army of nurses to the homes of the poor to teach them how to pasteurize the milk in their own homes." Dr. Charles E. North, after a very interesting and instructive interview, informed us that he procured certified milk and pasteurized it in his own home before using. Special interest was taken in our visit to the Strauss Laboratory, Pasteurizing plant, and milk depots. No milk is accepted for pasteurization that falls below the standard

set for certified milk by New York City. Over four million bottles of this milk were used last year, and nearly one and one-half million glasses were sold to the poor in the parks at 1 cent a glass. In this noble charity, Mr. Strauss, we are informed, expended over \$100,000 last year.

On June 7th, our Commission was represented by the Chairman at the third annual meeting of the American Association of Medical Milk Commissions, held at Atlantic City. At that meeting there were reports presented from twenty-seven Milk Commissions, and eighteen papers and addresses on the various phases of the milk problem and its relation to public health were read and delivered. The papers and addresses were all of a very profitable character, prepared and presented by such men as Dr. Henry L. Coit, Dr. Rowland Godfrey Freeman, of New York; Dr. E. C. Schroeder, Superintendent of the Experimental Station, Bureau of Animal Industry, Department of Agriculture, Washington, D.C.; Dr. John W. Kerr, Assistant Surgeon-General, United States Public Health, Marine Hospital Service, Washington; Dr. Wm. H. Park, Director of the Research Laboratory of the New York Department of Health, New York City; Dr. Thomas L. Darlington, Commission of Agriculture, Albany, N. Y.; Prof. H. W. Conn, Wesleyan University; Dr. H. A. Evans, Commissioner of Health of Chicago, and others.

We have communicated with all the local Boards of Health throughout the Dominion in cities of 10,000 or more, as to what they have done to improve the milk supply in their respective jurisdictions, in a general way, also what they are doing and what they propose doing in the future. Replies were received in most cases, accompanied in many cases with literature. These are being carefully tabulated, so that we may have a summary of all the work done.

As the aims and objects of the milk campaign now engaging the attention of all civilized nations is to save human life and diminish human suffering, our Commission has endeavored to ascertain the extent to which life is in danger by market milk along the following lines:

First.—The relation of milk to infant mortality.

Second.—The role played by milk in the spreading of communicable diseases.

Third.—Milk as a cause of tuberculosis.

Fourth.—Pasteurization; its effects on milk and the bacteria in milk.

Fifth.—What is being accomplished by Milk Commissions to remove the aforesaid dangers.

Attention was first drawn to the dangers to human life lurk-

ing in milk in an attempt to ascertain the cause for the appalling tide of infant mortality, when it was found that 90 per cent. were from the ranks of hand-fed children. It was also observed that there was an abrupt upward curve in the midsummer months and an equally sharp drop in the Fall. The marked increase in the months of July, August and September was found to be due largely to diarrheal diseases, there being very little fluctuation in the non-diarrheal cases. Of the 1,943 fatal cases collected by Dr. Emmett Holt, of New York, only 3 per cent. were exclusively breast-fed. Prof. Von Behring says that in Germany, of every 1,000 born alive, 237 succumb during the first year of life, and only 510 out of the 1,000 ever attain manhood, and not more than a third of those reaching maturity are found to be fit for military service. These sad facts, says Prof. Behring, are attributable in a large measure to the effects of infection derived in infancy from contaminated milk. In Leipsig, of every 1,000 children born in the month of August, 571 died, and of these, 430 were from diarrhea. In Berlin, Germany, the infant mortality among hand-fed children during the hot summer months is from twenty-one to twenty-five times greater than among those fed from the breast. In Australia, the authorities are gravely concerned about the awful infant mortality. Dr. Turner points out that in Brisbane during the summer months more than half of the bottle-fed babies died. Musket, of Sydney, made the statement that at least 50 per cent. of the children who have died in the last ten years in New Zealand and Australia might have been saved. Dr. Newsholm, of Brighton (Medical Officer of Health), in an article recently published in *The Lancet*, said: "Breast-fed children contribute but one-tenth of the diarrheal infant mortality." Dr. McLeary, Medical Official of Health for Hampstead, says that infant mortality, broadly speaking, is a mortality of hand-fed infants. In Germany, 41.3-7 per cent. of the entire mortality of the year occurred in the months of July and August. On the other hand, in Prague, Austria, where nearly every woman nurses her own babe, the hot summer months do not show any appreciable increase in the infant mortality. It is quite obvious, therefore, that gastro-intestinal disease is but another term for milk poisoning. While the marked similarity of these reports from the various European nations and the United States is very convincing, yet much more convincing are the recorded results for cities where market milk has been displaced by certified and pasteurized milk.

As regards the role played by milk in the spreading of communicable diseases, over 500 epidemics have been collected by the department at Washington, traced directly to milk.

MILK AS A CAUSE OF TUBERCULOSIS.

The great significance of the second interim report of the Royal Commission on human and animal tuberculosis cannot be overestimated. Their conclusion was to the effect that a large proportion of tuberculosis contracted from food is due to the bacilli of bovine source, and that a very considerable amount of disease and loss of life, especially among children, must be attributed to cows' milk containing tubercle bacilli.

Dr. McCaw, Senior Physician to the Belfast Hospital for Sick Children, after twenty years' careful study of tuberculosis of children in connection with the seven leading hospitals for sick children in England, Ireland and Scotland, reported that 25.5 per cent. of all the children treated in these hospitals were suffering from some form of tuberculosis. This certainly demonstrates beyond questioning the presence of tuberculosis in children to an alarming extent, and at a period when milk constituted the principal article of diet.

Until recent years it has been thought that tuberculosis was contracted by inhalation; but it is now known that, in the vast majority of cases, the germs are taken into the stomach with either food or drink, and pass into the bowels, where they either set up local disturbance, or, penetrating the mucous membrane, are conveyed into the main lymph stream of the thoracic duct, through which they are conveyed to the blood stream, and thence to the right side of the heart; thence to the lung, where they are filtered out by the wonderful network of vessels in that organ. Here they may lie latent until the vitality of the parts is lowered by some inflammatory action, when they gain the ascendancy over the resisting forces of nature, and the host becomes the victim of tuberculosis.

The question is often asked: "Does the milk of a tuberculous cow, whose udder is not affected, contain tubercle bacilli?" The consensus of opinion is that it may do so, but this is not by any means the only source of milk contamination by tubercle bacilli. It has been demonstrated that a cow suffering from an attack of tuberculosis so slight as not to give any physical signs of disease may be excreting from the bowels 37,800,000 tubercle bacilli per day. The slightest particle of this excretion on the udder of a healthy cow may gain access to the milk, and in this way contaminate the entire milk supply of the herd. Then there is always the danger of contamination from those handling the milk.

Our Commission would like to draw special attention to the preponderance of all pathogenic germs in gravity cream, it having been demonstrated by Hess and Freeman, of New York,

especially, that from 75 to 90 per cent. of all pathogenic germs found in milk are above the cream line. In a bottle of milk well within the standard for a certified milk, after standing for twelve hours at room temperature, the upper two ounces of cream were found to contain 115,000 bacteria per C.C., while the milk in the same bottle only contains 6,000. When one couples with this the recent discoveries made by Schroeder, of Washington, of the frequency of tubercle bacilli in butter, and that after 90 to 160 days they were found to be but slightly, if at all, reduced in virulence, and the animals fed on this butter, or into which it had been injected, readily contracted the disease, it is obvious, therefore, that, measure for measure, we have in butter a greater danger of tubercular infection than we have in milk. "In fact," says Schroeder, "it is difficult to imagine a better environment for the conservation of the life and virulence of tubercle bacilli, not actively associated with tubercular lesion, than butter affords." In conclusion, Dr. Schroeder says: "Until we are certain that the milk delivered to us is obtained from healthy cows, in every way protected from exposure to tuberculosis, we should not use it until it has been pasteurized, and all cream that is not above suspicion should be pasteurized before it is used in the preparation of butter. The average market milk, unpasteurized, is to-day the most important cause tolerated by civilization for unnecessary disease, suffering and death." With such indisputable evidence of the manifold danger to human life in milk, and in view of the fact that, notwithstanding the efforts put forth by the various Milk Commissions of New York City for from ten to fifteen years, less than one per cent. of the milk consumed in that city last year came up to the standard of certified milk.

Therefore, having carefully reviewed the investigations made and the conclusions arrived at by the highest authorities and most ardent and careful workers in the campaign for milk that can be accepted as a safe food for human use, we strongly advise, in the interests of public health, that all milk not answering the standard set for certified milk be pasteurized, and that the milk, before being accepted as fit for pasteurization, must be at least microscopically cleaned and kept at the lowest possible temperature; and also that the shortest possible time elapse from the taking of the milk from the cow until it is pasteurized, and that immediately after pasteurization the milk be lowered to a temperature of 40 degrees and maintained at that until used, all pasteurization to be under control of the health department.

We would also recommend that as soon as possible the entire

source of milk supply of the Dominion be placed under rigid inspection of the various health departments, from the producer to the consumer, such inspection, at least, as will secure a clean milk.

The consensus of opinion of the most eminent authorities on the Continent of America is that pasteurization, such as we recommend, will destroy all disease-producing germs, and does not interfere with the digestability or food value of the milk, and from the investigations made by our Commission we can fully endorse the above statement, and therefore recommend the following classification for the milk supply of the Dominion:

First.—Certified Milk.

Second.—Inspected, Pasteurized Milk.

The inspection to be such as will insure a clean milk, by simply adopting cleanly habits such as apply to the care and production of any other article of diet placed on our tables, which case need incur but a slight increase of expenditure on the part of the producer.

We are having sub-commissions appointed and organized all over the Dominion.

We expect, by June next, to have from one-half to two-thirds of the milk consumed in Toronto officially pasteurized and therefore absolutely safe for human use.

SO-CALLED R.H. REFLEX NEUROTIC SYMPTOMS AND THE PSYCHIC FACTOR*

BY TOM A. WILLIAMS, M.B., C.M. (EDIN.), WASHINGTON, D.C.

At one time tremendous emphasis was laid upon the irritation of the nerve terminals as a source of neurasthenia, hysteria, and neuroticism in general. Innumerable turbinates have been shaved, appendages removed, and errors of refraction corrected on account of this notion. But extended experience has convinced even the most ardent specialist in rhinology, gynecology and ophthalmology, when they are possessed of scientific honesty and clear-mindedness, that comparatively few neurotic cases arise from purely reflex irritation.

There is still, however, much confusion as to the genesis of the psychoneuroses. The source of this confusion lies in the want of clear differentiation between symptoms referable to the autonomic nerves and those which often so closely resemble them, although originating psychically. A few examples will make this clear.

The abnormal frequency of micturition in the earlier period of gestation has its source, in all probability, in the stimulation of the afferent nerves from the neck of the bladder on account of the stretching of the tissues around the utero-vesical pouch by the rapidly expanding uterus. Any impulse passing by this track is necessarily interpreted as an irritation of the mucous membrane by urine, which experience has taught us to associate with need for micturition. There is really an illusion, comparable to that in one's toes when the nerves are stimulated in the stump of an amputated leg, or in the more familiar "funny bone" experience.

Now the sensations derived from these are totally unamenable to psychic influences, although, of course, the patient's response to the sensations is modifiable by the will.

Very different is the case of the nocturnal incontinence of children, perhaps one of the most typical of the misunderstandings of the theorem now being illustrated. This affection is purely psychogenetic, for it is due to a failure to educate the cortical inhibition so that it may maintain itself during the relaxation of sleep.

In connection with this, there is another common misapprehension that during sleep consciousness is suspended. That is

*See N.Y. Med. Jour., Jan. 22, etc.

not the case, as innumerable examples prove. Only two of these need be cited. One is the power which many people possess of appreciating the lapse of time while they are asleep. They can approximately judge the hour when they awake accidentally during the night, and can determine in advance the hour at which they should awake in the morning. Another series of facts shows that we are not even insensible to peripheral stimulation during sleep. For instance, by stimulation of the skin, muscles or special senses, the contents of dreams can be determined; not only that, but direct ideas can be inculcated in speech, and a psychotherapeutic method has been based upon this fact, especially in childhood—indeed, it has been particularly applied to incontinence of urine, on account of the supposed efficacy of what its exponents are pleased to call the “subconscious.” We need invoke no such hypothesis; for suggestion during sleep, hypnosis, or any other “passive” state is more effective, merely because the idea invoked then dominates the field of consciousness uninterrupted by other extraneous stimulations; hence it is much more easy to gain the attention and make an idea penetrate in these states; but the technical skill which we call persuasive power is capable of doing the same, with the subject in no matter what state. The problem is merely one of fixing an idea in the patient’s mind so that it may energize towards the desired end.—See author’s *Considerations as to the Nature of Hysteria*, Int. Clinics, 1908; also *Requisites for Treatment of the Psychoneuroses*, *Dom. Jour., Month, Cyclop., etc.*, August, 1909.

LARYNGOLOGY AND RHINOLOGY.

IN CHARGE OF J. PRICE-BROWN.

The Anatomical and Clinical Relations of Meckel's Ganglion to the Nose, and Its Accessory Sinuses. G. SLUDER. (*New York Med. Journ.*, August, 1909.)

Several cases of severe neuralgia of migraine type are reported, associated with post-ethmoidal or sphenoidal sinusitis, or the two combined. Believing that the intense pain was due to pressure on or infiltration of Meckel's ganglion, applications of a saturated solution of cocaine (67 per cent.) were applied through the nose over the spheno-palatine foramen, with a remarkably good effect. A single drop was usually sufficient. A .4 per cent. of formaldehyde was nearly as effective in relieving the pain.

The Faucial Tonsils and the Teeth. HUDSON MAKUEN. (*Jour. Amer. Med. Assoc.*, June, 1909.)

The author describes in detail the inter-relationship which exists between diseased conditions of the tonsils and teeth. We cannot cure mouth-breathing and its disastrous effects invariably by removing adenoids and tonsils. Enlarged tonsils cause dental deformity by pressure on the molars. Degenerated tonsils should be removed, although they be inactive. When dental irregularities exist coincidentally, they should be regulated, in order to obtain the full advantage of throat operations.

Functional Relation of the Tonsil to the Teeth. GEO. H. WRIGHT. (*Boston Med. and Surg. Jour.*, May, 1909.)

The author considers that enlargement of the tonsils, without infection, coincides definitely with four periods of tooth eruption, between the ages of two and eighteen years. He discusses the development of the teeth and the lymphatic arrangements in relation with these organs. Then he offers the following six observations: (1) When the tonsil is normal, infection from the external surface is rare. (2) Secondary infection through the lymph-channels is the usual source. (3) There are four periods of molar eruptions, with some variations in time, when the tonsils may enlarge without infection or inflammation, as two, six, twelve and seventeen years. (4) Tonsils, though slightly enlarged, when not infected, return to normal with complete eruption of the teeth. (5) Diseased teeth are a prolific source of enlargement of the glands through proximity of mem-

branes, either directly by infection or by toxins. (6) In the treatment of the tonsil by the specialist, may we not include as a routine the observations as to carious teeth, and a recognition of these four periods of eruption coincident with slight enlargement?

Lipoma of the Larynx. M. A. GOLDSTEIN. (*Laryngoscope*, September, 1909.)

The writer opens by discussing at some length the many inaccuracies, discrepancies and erroneous quotations which appear frequently in reports of cases submitted for publication to medical journals. Cases of lipoma of the larynx are exceedingly rare, yet not rare enough to escape this misrepresentation; and to place the subject on a reasonable basis, the writer deals with it in detail, before entering into a discussion of his own case.

The etiology of lipoma is very obscure. There are three possible etiological factors:

First.—The development by simple hyperplasia of distinctly independent or encapsalated fat masses from fat cells or small areas of adipose tissue.

Second.—The possibility of an embryologic origin of tissue favorably disposed to such fat development.

Third.—The most recent theory of cell-metamorphosis and cell-proliferation, as advanced by Gideon Wells and supported by Jonathan Wright.

Pathologically, no definite form of growth of lipomata in the larynx has been determined. Jones' case was a long, pendulous neoplasm, attached by a thin flat band. The cases of Golbek and Schroette were of the multiple variety. Farlow's was a polypoid lipoma.

Lipoma usually grows slowly, and may continue to develop for many years without impairing the general health, unless by its presence it interferes with the regular physiological functions of the body.

In Holt's case, the patient died suddenly from suffocation. McBride's cases were both of large size, as also was Kochler's.

One interesting fact is that cases of pure lipomata are usually attached by slender pedicles, while lipomata of a mixed type have a broader base of attachment.

Recurrences after removal are reported by Braus, McBride, Golbek and Hinkel. For each of these, however, the neoplasm was not completely extirpated. The original growth comes on slowly, the recurrence much more rapidly.

Twelve cases in all have been reported, Goldstein's making the thirteenth.

Author's Case.—Mrs. P. D. P., white, aged 33 years. Saw her first at the hospital. Patient lying on left side; extreme physical depression; skin moist and clammy; pulse thready, but regular; tongue flabby and coated; respiration shallow, irregular and marked with stridor, the chief difficulty being defective respiration. On examination, a pale, yellowish-pink mass was found to completely fill the glottis. It was convex and glistening. The history proved that the growth of the tumor had been gradual, extending back for years.

Endo-laryngeal operation was decided upon. After applying cocaine and adrenalin, the tumor was removed with a Krause snare. This was readily accomplished, and the bleeding was slight. But a similar growth was found to lie beneath the upper one. In attempting to remove it, a portion of the capsule of the tumor was engaged in the snare, and it was found to be impossible to cut through the pedicle with the wire, or to disengage the instrument. Hence, strong traction was made by the snare, drawing up the whole larynx, so that the parts could be observed directly. Then the pedicle was cut through with long, curved scissors.

The patient got immediate relief. There was no reaction. Hemorrhage was very slight, and she made an uneventful recovery.

On examination, each tumor was found to be independently encapsulated. One weighed 48 grains, the other 46 grains, and each had been attached by its own pedicle.

Three Cases of Thyroidectomy for Cancer of the Throat.

STUART LOW. (*Journ. of Laryngology*, December, 1909.)

Case 1.—Patient, male, with loss of voice and difficulty of swallowing. Large, grey, mushroom-like mass covering over and projecting into larynx. Clinically and pathologically reported as a rapidly growing and virulent epithelioma. On May 10, 1909, under local anesthesia, a collar incision was made over the thyroid, the isthmus divided, the left lobe isolated, and all the vessels proceeding to and from it ligatured. Suddenly the larynx became obstructed, from the growth becoming fixed in the passage. Cyanosis developed, and as respiration ceased, tracheotomy was at once resorted to. This was followed by quick recovery; and as thorough removal of the thyroid would have greatly prolonged the operation, it was decided to tie the superior thyroid of the right lobe, and trust to this and efficient ligation of the left lobe to minimize the thyroid functions. The large wound was partially closed and firmly packed with gauze. The patient made an excellent and uninterrupted recovery. The left lobe of

the thyroid, all the vessels of which had been ligatured, sloughed and came away in the dressings.

Six months later the patient had gained 15 pounds in weight, he was swallowing better, and the growth in pharynx and larynx had diminished much in size. There had been no pain and his physical strength had increased.

Case 2.—Male, aged 58 years; had something on the neck of six weeks' duration. There was a large excavated ulcer on side of tongue the size of a shilling, the hardness and induration extending to the palate and sterno-mastoid at angle of the jaw. Clinically and pathologically, the disease was pronounced to be epithelioma. As it would be fatal to attempt eradication by operation, hemithyroidectomy was decided upon. This was done on June 3, 1909, the left half of the thyroid being entirely removed. The patient remained in the hospital one week after operation. There was no pain in the tongue or neck. The ulcer on side of tongue healed, the induration became less, and the glandular swelling softer. Shortly afterwards the man returned to his work as a painter.

A particularly interesting feature of this case was that the hard mass of glands on right side of neck softened, with increasing swelling. This was finally opened and found to contain a large quantity of glairy mucous, which, on pathological examination, proved to be mucin—the inference being that the removal of the thyroid had induced a mucin degeneration of the mass of cancerous glands.

Case 3.—A man, aged 65 years, had epithelioma of the soft palate and glands on both sides of the neck. On July 10, hemithyroidectomy was done under local anesthesia. Four months later he was still under observation. He had gained six pounds in weight. His general condition had improved, and the glands had become smaller and softer.

From the history of these three cases, the conclusion seemed obvious, that practical removal of the thyroid had an influence upon malignant growths located in their vicinity. It deterred the rate of growth of the primary tumors, affected favorably the secondary glands, and relieved the pain. Another notable feature was that in each of the instances recorded the pulse rate was diminished.

Esophageal Cases. H. P. MOSHER. (*Laryngoscope*, October 1909.)

In an article dealing with the history and treatment of a number of cases, the writer draws the following conclusions:

"Strictures of the esophagus are best diagnosed and best treated by means of the esophagoscope and instruments used through it. Nothing can be more satisfactory than the finding of a stricture by this means, and determining its location, nature and extent. Opening the stomach for the relief of non-malignant strictures ought to become a rare operation. Opening the esophagus from the side of the neck for the removal of smooth foreign bodies is already obsolete surgery. The ballooning of the esophagus promises to be a help in locating the lumen of tight strictures, and the direct method of carrying a gelatine capsule filled with thread through the stricture into the stomach is much better than feeding the thread to the patient. The perforated metal olive bougies of Mixter, which run down a thread as a guide, are of great service in pouch cases, and in cases of tortuous or tight strictures. The thread keeps the bougie from going wrong. After a while the small guide can be used without the thread, and the olives passed on the guide. The small metal guide often finds the way better than the larger elastic bougie. When the metal guide is in place, the larger olives can be run on it with the greatest confidence."

The second of the three cases that are reported in this paper forcibly demonstrates the great advantage that can be derived from the use of the esophagoscope.

The patient, a woman aged 30, had suffered from difficulty in swallowing for fifteen years. There was a doubtful history of having swallowed a fishbone during childhood. She had been treated by many physicians, had bougies passed during part of the time, and had also for a while been regularly fed by stomach tube. Her normal weight was 130 lbs. When referred to Dr. Mosher, she weighed only 75 lbs., and was reduced to skin and bone. There had never been any pain, only a sensation of fulness after eating, starting at the epigastrium and extending upwards as far as the larynx. There was no nausea, and the regurgitation was largely voluntary and brought on in order to secure relief.

To aid in diagnosis, bismuth was given to her, and a fluoroscopic examination made, after which an X-ray picture was taken. The conclusion drawn from these examinations was that there was a stricture at the cardiac end of the esophagus, with an elongated dilatation of the esophagus above it. Under ether, a large oval tube was easily passed into the esophagus, the lumen of which was found to be dilated all the way down, gradually increasing in size, reaching the maximum at the lower part behind the heart, the motions of which could be distinctly seen against the esophagus all the way down.

When the esophagus was ballooned the dilatation appeared as a large black cavern, which the light of the tube failed to illuminate. The opening into the stomach, however, was readily found. It lay to the extreme left of the bottom of the pouch and on a somewhat higher level. A good-sized bougie was passed into the stomach. This was followed by a mechanical dilator and the opening spread to 45 F., when resistance became marked. Dilatation was discontinued and a small metal bullet attached to a string was passed into the stomach, the upper end of the thread being fastened with adhesive plaster to the cheek. On succeeding days olives of progressive sizes were passed over the thread until the structure became permanently enlarged, the recovery of the patient in the end being quite satisfactory.

The Relative Value of Esophagoscopy and External Esophagotomy. E. J. MOORE. (*Revue Hebd. de Laryngol. d'Ot., et de Rhinol.*, Sept., 1909.)

In spite of the immense value of esophagoscopy in locating and extracting foreign bodies, this writer affirms that cases occasionally occur in which the instrument is useless. A coin lodged just at the entrance of the esophagus of a young child may be missed altogether, while it can be easily and safely removed by the use of Keimissen's hook.

He relates another instance of an entirely different character. A child three and a half years old swallowed a toy anchor, which became impacted in the esophagus. The esophageal tube, used under chloroform, slipped time after time into the trachea, owing to violent spasms. The foreign body was located by a radiograph and finally removed by external esophagotomy.

OBSTETRICS AND GYNECOLOGY

Ruptured Ectopic Gestation Sac.

The question of when to operate in these cases has received fresh impetus from a series of opinions brought out by men well qualified to express them, which opinions are rather startling in their very radical differences. By one group it is held that they should be treated expectantly, in the belief that the natural protective forces of the body will eventually tend to control the hemorrhage. To support this view, Robb has conducted an elaborate series of experiments upon bitches, in which he succeeded in severing both the uterine and ovarian arteries without fatal results to the dogs. From his experiments Robb concludes that intra-abdominal hemorrhage such as is met with in women suffering from collapse after rupture of an ectopic gestation sac is not sufficient in itself to cause a fatal termination. Death, he thinks, is caused mainly by shock, which may be increased by various procedures. The hemorrhage *per se* is rarely if ever the sole cause of death.

In a discussion held in the American Gynecological Society in 1908 the difference in thought among the leading operators of the country was most marked and of the greatest interest. Upon the one hand, it was maintained that the great bulk of the subjects of ruptured ectopic gestation sac recovered from the effects of the hemorrhage, and, if they were treated expectantly, either the products of gestation were absorbed, with complete recovery of the patient, or a hematocele developed, which might later be removed when all evidences of acute anemia had ceased. The other side held strongly that hemorrhage in such cases was fatal in an alarmingly great proportion of the patients, and that it was one of the fundamentals of surgical technique, at once and under any conditions, to check active hemorrhage. As illustrative there were cited those distressing cases of post-operative hemorrhage in which, in the event of a ligature slipping from any one of the four primary arteries supplying the internal genitalia, fatal bleeding almost invariably resulted, unless a secondary operation with ligation of the bleeding vessel was carried out in time to prevent the exsanguination of the patient.

The correct view of this question, as is so generally the case, seems to lie in the middle ground between the two extremes. When the shock is profound and the patient is unconscious, bloodless, or even moribund, she should certainly not be sub-

jected to the additional strain of any operative procedure, but should be treated on the expectant plan. Such treatment, however, is not peculiar to ectopic gestation, but is axiomatic in surgery of any kind. It is never permissible to operate in the face of the certain death of the patient. Excluding, then, those cases in which surgical interference is not justified, whatever the diagnosis, there remains the great majority in which active hemorrhage is in progress. Here there can be no question that ordinary surgical principles must be applied and hemorrhage arrested at once by ligation of the bleeding vessel. It seems dangerous to spread abroad the belief that a woman with a ruptured ectopic gestation sac will recover if let alone. Such teaching must lead to many preventable fatalities, and should not be continued, whatever experiments may indicate. Ectopic gestation is a dangerous condition, one of high mortality and one which requires the immediate attention of a skilled and experienced gynecologist.—*N. Y. Med. Jour.*

Sterilization after Cesarean Section

In a discussion on the papers of Drs. Polak and Green, read before the American Gynecological Society, Dr. E. W. Cushing, of Boston, did not think Dr. Green, or even the Boston Lying-in Hospital, had a right to determine whether a woman should be sterilized or not. A woman's body belonged to herself. If she had been malformed by nature and could not be delivered of a child without repeated surgical operations which involved the risk of life, and she desired to avoid that subsequent risk by having a sterilizing operation done, she had a right to do so.

Dr. Henry D. Fry, of Washington, D.C., said it was his rule to explain the situation to the woman and her husband and allow them to decide whether or not she should be sterilized. He did not believe we could make a dividing line on account of the social position of the woman, and say we could sterilize those of the lower class and not those of high social position. If such a position were taken, women of humble position, who had given birth to children who had subsequently become great men, would be sterilized.

Prof. Hofmeier, of Würzburg, Germany, had performed sterilization not only with the consent of the woman and her husband, but at their urgent request. He did not think it was possible for women to abstain from sexual intercourse and subsequent pregnancy, as indicated by Dr. Green.

Dr. Charles Jewett, of Brooklyn, performed Cesarean section two months ago on a woman upon whom he did the same operation two years previously, and at the request of both the husband

and wife he felt justified in doing an operation of this character. He resected the tubes from the cornu of the uterus, then simply caught the ends of them down upon the suture line.

Dr. Herbert R. Spencer, of London, did not consider we were justified in saying, in the absence of pathological conditions such as fibroid tumors, cancer or infection, that a woman should not have any more children. From a purely ethical standpoint, he could not see any difference between consenting to operate on a woman and preventing her from having children by this sterilizing operation and committing an abortion because she asked it. The so-called sterilizing operation was not always reliable. A distinguished abdominal surgeon in England supposedly sterilized a woman, but subsequently, much to his annoyance and mortification, she again became pregnant, and he delivered her of a child. He delivered this woman for the seventh time after so-called sterilization.

Dr. J. Montgomery Baldy, of Philadelphia, said his sympathies went out largely to women. They had a right to say, and an exceedingly serious say, in regard to many of these operations. If a woman, guided by the conscientious judgment of the physician, decided to be sterilized, we had a right to sterilize her and prevent reproduction in the future in this individual case, but this did not mean that this operation should be done on every woman who requested it.

Dr. Gellhorn, of St. Louis, said he thought we should be a little more charitable, and not do unto others what we did not want done unto ourselves. He denied the right of any physician to sterilize any woman, and only for grave reasons should the operation be acceded to, and then it should only be done by consultation with one or more other physicians.

Dr. Willis E. Ford, of Utica, N.Y., expressed the hope that the Society would not go on record in favor of the sterilization of women, because if the members opened the door it might be opened still wider for other operations which ought not to be done.—*Amer. Jour. of Obstetrics.*

Cesarean Section in Placenta Previa

We extract the following from a report of a discussion at the last meeting of the American Gynecological Society, which appeared in the *American Journal of Obstetrics*:

Dr. George Tucker Harrison, of New York, said that while it was true that in the preponderating majority of cases of placenta previa occurring in practice, the obstetric resources at our command were amply sufficient, there still remained a class in which the performance of Cesarean section, whether *vaginal*

or *classical*, might well challenge serious consideration. The class of cases referred to were those in which dangerous hemorrhages occurred while, at the same time, the cervix was maintained in its entire length. The Cesarean section was especially indicated when the patient had reached full term, but her life was jeopardized by the hemorrhages. To show the changed attitude toward this question on the part of prominent obstetricians in recent years, he recalled well in 1902 a paper he had heard upon the indications for recourse to Cesarean section, by Dr. Kerr, of Glasgow, at the meeting of the British Medical Association, in which the author declared that those who found such an indication in placenta previa did so because they were ignorant of proper obstetric methods. Dr. Kerr, of Glasgow, in his recent admirable work on "Operative Midwifery," speaks as follows: "I have never performed Cesarean section for placenta previa, and it may be I never shall, but I am less antagonistic to it than I was." The cases he referred to were old primiparæ where the hemorrhage occurred at full time and before labor had started, and where, to judge by the condition of the parturient canal and the size of the child, delivery would be tedious and difficult. He had in mind only the classical abdominal Cesarean section. "Under no circumstances whatever," he remarks, "is it conceivable that vaginal Cesarean section is a suitable operation for placenta previa in the later months of pregnancy." This positive expression of opinion should not carry much weight, as it was based entirely upon *à priori* reasoning. On the other side, listen for a moment to an obstetrician of vast learning, of large experience and profound sagacity, Dr. Bumm, of Halle. Speaking of the vaginal Cesarean section, he observed: "I have performed this operation four times—this was several years ago—for severe hemorrhage in placenta previa. In each case the cervical canal was maintained in its entire length. In three cases there was a profuse loss of blood at the sixth or seventh month, and the fetus dead. In the fourth case the pregnancy had advanced into the ninth month and the child was living. This was extracted without harm and remained alive, its weight 2,950 grams. The bleeding from the incised edges could be controlled without difficulty; the bleeding also where the incision extended into the domain of the placenta was only moderate; a couple of spurting arteries were provisionally clamped; the suture sufficed for the complete stoppage of the bleeding. In the operation I have constantly had the feeling of full security against loss of blood, and believe that the vaginal hysterectomy in women, who already at the beginning of dilatation have lost much blood, may be effective in saving life. At all events, it is superior to the abdominal Cesarean

section in consideration of the smallness of the wound and to all dilatation procedures from the certainty of arrest of hemorrhage."

He expressed astonishment at the ease of the operation when he performed vaginal Cesarean section for placenta previa.

Considering all the advantages appertaining to the operation, he held firmly to the conviction that under the circumstances mentioned, when the Cesarean section was indicated, the operation of choice should be the vaginal Cesarean section. The classical Cesarean section should be reserved for the cases in which the vaginal was excluded, as, for example, contracted pelvis.

Dr. Charles Jewett, of Brooklyn, said: "If the well-established rule is to be maintained, which respects first the interests of the mother, delivery by abdominal section can very seldom be justified in placenta previa. Its indications must be restricted almost wholly to the complications.

"Vaginal Cesarean section, the cause of which has been espoused especially by certain German writers, has no greater claim to consideration than the suprasymphyseal operation. While it may offer perhaps quite as good a prognosis for the mother, the chances for the child are not so good owing to the somewhat greater fetal risks in extraction through the natural passages.

"Not only do we find little rational basis for Cesarean section in placenta previa, but its claims receive scant support from experience. In two thousand and ten cases of placenta previa the maternal mortality under obstetric methods of delivery was 221 (10.9 per cent.), the fetal 1,159 (57.3 per cent.). Seven hundred and twenty-six of these cases, reported by Füth, were collected from the practice of midwives and general practitioners. Many were subjected to prolonged tamponade and were exhausted by needless hemorrhage. Exclusive of Füth's cases, the maternal mortality was 6 + per cent. and the fetal 61.8 per cent.

"Comparing these results with those of ninety-five abdominal Cesarean operations collected from seven publications, all but one of the last year, we find in the latter a mortality of 11.5 per cent. for the mothers and 34 per cent. for the children. Sellheim in one vaginal Cesarean section saved both mother and child.

"In twelve uterovaginal sections reported by Bumm the maternal deaths were 8.3 per cent., and the fetal 83.3 per cent.

"Hammerschlag refers to twenty-six vaginal Cesarean sec-

tions at the Königsburg Clinic, with a fetal death rate of 55 per cent. How many mothers were lost he fails to say.

"The abdominal sections were performed by operators of exceptional skill. Yet the maternal mortality was nearly doubled and the fetal was not correspondingly diminished. The few vaginal operations make a better showing for the mothers than the abdominal, but the percentage of fetal deaths is no less than under obstetric methods.

"If conclusions may be formulated on so small a number of cases the Cesareanists have not yet established their cause."

Editorials.

CANADIAN MEDICAL ASSOCIATION

We understand that arrangements are nearly completed for the next meeting of the Canadian Medical Association, which will be held in Toronto, June 1, 2, 3, 4. It has been decided that the meeting will last four days instead of three, as in former years.

The various local committees in Toronto have been working faithfully for several months, and as a result of their work there is now no doubt that an exceedingly attractive programme will be forthcoming.

The meeting will be held in the buildings of the University of Toronto, through the kindness and courtesy of President Falconer and the Superintendent of Buildings and Grounds, Mr. Colin Graham Campbell. The General Sessions, and probably the meetings of the Surgical Section, will be held in the Convocation Hall. The Sections in Medicine and Obstetrics will probably hold their meetings in the large Examination Hall attached to Convocation Hall. Meetings in other Sections will be held in the Physics Building, which is situated south of Convocation Hall. We understand that there will be an unusually large attendance from our great Western district.

ATHLETIC DEATH

In an interesting article which appeared recently in the *Toronto Mail and Empire*, the following question is asked: "Can athletes regain their lost form? Can bone, tissue and heart that have suffered what is called 'athletic death' be resurrected?"

Most physicians who have taken an interest in this matter believe that an athlete reaches his best condition after much hard and steady work, and after he has reached this highest pitch of perfection he can remain in such condition for only a limited time, a number of months, or in some cases a number of years.

It is thought by many that if, after reaching this highest point of good condition, he quits training for even a year he can never "come back." The decay thus intimated is not attributed to age, although, of course, age must bring its inevitable results in the course of time.

Several instances are given of athletes who, although young men, failed to "come back" after comparatively short periods of rest. For instance, a few years ago Amos Rusie, of Indianapolis, was the greatest baseball pitcher in the world; his speed was terrific and his curves were wonderful. On account of a disagreement with his club he stopped playing for one year; then his troubles were settled and he was put in "the box" again. He did not, however, last out the season, and, instead of being the best pitcher in the world, he soon fell down to about forty-first place. B. J. Wefers, a famous American runner, was for a certain time the champion. He retired for a time, but after a couple of seasons attempted to claim his former exploits. TenEyck, the famous oarsman, after a comparatively short rest, failed to regain his former speed. Some people are considering these facts in connection with the proposed prize fight between Jeffries and Johnson: Will the older athlete be able to "come back" again?

THE PHYSICIAN AND THE NURSE

Among our exchanges there is none more interesting than the *Canadian Nurse*, which is published in Toronto under the editorship of Dr. Helen MacMurchy. We read with a certain amount of regret a letter in the January issue written by a nurse. Although we may not admire the style or tone of the writer or of Miss B. Mordant-Wilson, from one of whose articles the writer has given a long quotation, we must acknowledge that certain statements are worth considering. The following is one of the statements: "Nurses are often on duty 24 hours a day and seven days a week."

It is remarkable that some fairly decent people think that nurses should be on duty 24 hours a day. We fancy the writer in the *Canadian Nurse* knows how to take care of herself, but we

have seen many a good, conscientious nurse practically *done to death* by unreasonable people. Does the average medical practitioner do his duty to his faithful nurse? Does he properly appreciate the value of her assistance to him? Does he take the trouble to ascertain the amount of work she does and the time she spends in looking after the patient?

We hold a fixed opinion that it is the duty of the physician to know so far as possible what his nurse is doing. It is surprising what a nurse will frequently endure while caring for her patient. The physicians should see to it that the strain in such cases will not be unreasonably prolonged. The nurse should have some time for rest and sleep, and she should go out into the open air at least once a day. We do not propose to lay down a set of rules for the doctor. When, however, he has as his assistant a good nurse (one of the noblest specimens of God's creation) he should show her some kindly consideration.

TORONTO GENERAL HOSPITAL

A deputation from the Hospital Board, consisting of Mr. J. W. Flavelle, President Falconer, Dr. Byron E. Walker, Mr. P. C. Larkin, Mr. W. E. Rundle, Prof. A. B. MacCallum, Dr. J. N. E. Brown and Mr. Cawthra Mulock, appeared before the City Board of Control, February 14th, and asked that body to sanction a further contribution of \$200,000 towards the funds of the Toronto General Hospital. Mr. Flavelle, who acted as spokesman, said that it was the desire of the Hospital Board to establish a really first-class hospital in Toronto. The Government, University, and many private citizens had been most generous with their contributions. They now asked that Toronto should supplement these contributions by another grant of \$200,000, and in return the city would get one of the best-equipped hospitals in the world. There would be 449 beds in the public wards for the sick poor; there would also be an out-patients' department, well equipped and able to deal with more than 400 patients daily; also a modern ambulance service, so complete that in the event of a big accident occurring nurses

and doctors would be rushed to the scene to render first aid. The University authorities would equip and maintain laboratories in connection with the hospital.

Controller Spence said there was not a city on the continent which carried on its charitable work so economically as Toronto. The poor sent to the hospitals cost about 70 cents per head per day, and at the Isolation Hospital the cost was 90 cents per head per day, exclusive of any reckoning of the cost of construction and maintenance. Unless the city intended to start a public hospital and maintain an expensive staff they could not do better than donate the sum asked for. It would be money well spent, and would be of inestimable value to the sick poor. The Council gave two readings of a by-law authorizing the issue of debentures to raise the money, and at an early date the ratepayers will be asked to confirm the decision of the Council.

A SCHOOL CENSUS FOR NEW YORK

A most important step, with a direct bearing upon school hygiene and, therefore, preventive medicine, has just been taken by the City of New York. It has been realized there, and it is hard to see why it was not realized everywhere long ago, that if we are to have our children educated we had better know first of all who and where the children are.

The Truancy Act and the Compulsory Education Act are largely inoperative because we have not this information. The Mayor, the Police Commissioner and the City Superintendent of Schools have been made the Permanent Census Board for the Schools, and one of Dr. Maxwell's assistants, Mr. Geo. H. Chatfield, has been appointed permanent secretary of the Board. The city police make the returns and a system of cards has been devised, at once complete and simple, for the purpose of recording the answers systematically. The results of this census will be awaited with great interest, and the example of New York will, we hope, be followed in Canada.

THE WATER SUPPLY OF TORONTO

One of the most important factors in the daily life of a large centre is its water supply—the most potent factor as a disease-breeder, if it is not pure. The source of supply is always to be considered as of first importance. If it is impossible to obtain an absolutely pure supply, or one that is only impure at times, then filtration enters largely into the case, and becomes an absolute necessity. The value and ease of filtration are in the inverse ratio to the quality of the water, taking into consideration the different forms of contamination that water is subject to.

The city of Toronto has at its doors an unlimited supply of the purest water that can be found, but the position from which the supply is gathered has always been a source of frequent, if not constant, danger, both from storms and contra-currents. The intake pipe is laid southerly from the island into the lake for a distance of about three-quarters of a mile, the extreme end or inlet portion being turned upward. The lake bottom here dips rather rapidly and somewhat unevenly. This pipe, to be kept straight, had to be propped up on cribbing to maintain this straightness, and the sands then washed around the pipe until it is now lying on an even bed, heaped over with sand. It is easy to see that this sand is likely to be very much contaminated. The serious difficulty has now arisen that this sand is heaped up to such an extent that it is actually threatening to practically cover over the intake opening.

The department has applied for an appropriation to extend this intake opening some feet nearer the surface. The impurity of the water is greater nearer the surface, and consequently the extending upward of this pipe is placing it in a more contaminated source of supply. The water-works department may have fully realized the present situation, but the citizens have no evidence of it. It is no credit to a department to hunt for a remedy after a serious break-down has occurred, and that break-down has occurred in the water-works system to-day.

We have contended for years that the only true and business-like way of securing a permanent pure water supply for Toronto is to extend the intake pipe into the lake for a consider-

able distance, maybe as far as a mile, making the source of supply probably close on to two miles into the lake.

The writer has been assured by the department that this is impossible from an engineering point of view, on account of the very sudden dip a short distance south of the extreme end of the present pipe; but on asking for soundings and actual depths, matters which are of the utmost importance, he is told that there does not exist such a chart. We were told that such a chart was thought to have been made many years ago, but it could not be found in the department. It was not found, and we were not shown, nor in any way helped by the department clearly to see the matter, but were dismissed with the statement that it was absolutely impracticable. If the pipe cannot be extended without a great cost, surely a tunnel can be made into the lake, and the source of supply guaranteed forever. What Toronto must do is to move the intake pipe farther into the lake beyond the possibility of contamination such as exists to-day. The whole system will break down, and that at the most important part, if we do not do something at once.

THE CANADIAN HOSPITAL ASSOCIATION

The Fourth Annual Meeting of the Canadian Hospital Association will be held in Montreal on Easter Monday and the following Tuesday, March 28th and 29th.

Mr. H. E. Webster, Superintendent of the Royal Victoria Hospital, Montreal, is President.

Dr. Christian Holmes, of Cincinnati, and other eminent hospital workers will be present.

One feature of the meeting will be a visit to the various Montreal hospitals, with demonstrations on some special features of their work.

All hospital superintendents and hospital trustees are eligible for active membership, and anyone else particularly interested in hospital work is eligible for associate membership.

For further information in regard to the meeting application may be made to the Secretary, Dr. Brown, Toronto General Hospital.

Copies of last year's proceedings can be had from him on application.

THE TORONTO GENERAL HOSPITAL EX-HOUSE STAFF BANQUET

The Ex-House Officers of the Toronto General Hospital, of which there are now nearly three hundred, will hold their annual banquet at the King Edward Hotel on Easter Monday evening. Dr. Roland Hill, of St. Louis, will deliver the scientific address, following which the usual toasts will be drunk.

It is expected that the first presentation of the Gold-Headed Cane will take place. This has been awarded to Dr. Thos. Cullen, of Baltimore, who was considered to have made the best contribution of any ex-house officer to medical literature last year.

A strange story comes from Hungary. Dr. Joseph Fekete, of Rosinjo, Hungary, is charged with murder. He admits having given poison to a patient at the latter's request. The victim had endured appalling suffering for ten years, and his malady being without remedy the doctor administered poison with the full consent of the family, who were assembled at the bedside. A nursemaid had been listening at the door, and on her evidence the doctor was charged with a capital offence.

The Executive Committee of the Manitoba Medical Association has fixed May 26-27 as the dates for their next meeting. The Committee, in making a choice of dates, very kindly took into consideration the dates of the Toronto meeting.

It is expected that many from Manitoba will attend the Winnipeg meeting and then come to Toronto to attend the Dominion meeting. Some of these, together with several others from the Central and Eastern Provinces, will go to St. Louis to attend the meeting of the American Medical Association, which will be held June 7-10.

Personals.

Hon. Dr. Pyne, Minister of Education, had an attack of acute rheumatism, from which he was confined to his house for a good part of February.

Dr. J. Harvey Todd, radiographer, Toronto General Hospital, wishes to announce to the profession that he is now in a position to undertake radiography and radiotherapy at his office, 165 College Street.

Dr. Thos. Cullen, Associate Professor of Gynecology at Johns Hopkins Hospital, Baltimore, has been awarded a gold-headed cane, donated by Mr. P. C. Larkin, Vice-President of the General Hospital Board, for the best contribution to medical literature last year by an ex-house surgeon of that hospital. The subject of Dr. Cullen's article was "Adenomyoma." The cane is being made in England and will be patterned after the celebrated gold-headed cane of medical history, which is now in the possession of the Royal College of Physicians, of London, Eng. Dr. Cullen was a member of the General Hospital house staff in 1890-1.

Byron E. Walker, LL.D., has been appointed Chairman of the Board of Governors of the University of Toronto in the place of John Hoskin, K.C., LL.D., who has resigned his position on account of ill-health. Dr. Hoskin has been connected with the University since 1892, when he was made a member of the Senate.

The students of the Third Year of the Medical Faculty of the University of Toronto held a banquet at McConkey's Tuesday, February 8th. The officers were: President, F. R. Scott; F. S. Burke, L. P. Jones, R. W. Young, W. R. Calm, W. E. Caven and W. C. Campbell.

The Graduating Class of Medicine, Toronto University, held a banquet at the St. Charles, February 15th. The officers were: Hon. President, Dr. J. F. W. Ross; President, H. H. Murray, B.A.; Vice-President, R. A. Jamieson; Secretary, J. G. Alexander; Treasurer, F. Manley; and the other members of the Committee, R. T. Lane, F. W. Loring, F. E. Pitman and G. Hanna.

Wanted.—Medical assistant in city practice. Apply *Practitioner*.

Obituary.

JOHN MILL PIPER

Dr. J. M. Piper, of 544 Palmerston Boulevard, Toronto, died at his residence on February 7th. He received his education in the Toronto School of Medicine and graduated M.D. from Victoria College in 1880. After practising many years in London, Ont., he moved to Toronto.

RECTAL AND VAGINAL USE OF FIBROLYSIN

Mendel (*Muench. med. Woch.*) states that fibrolysin can only be given into the veins, subcutaneous tissue, or muscles. H. Althoff has, however, obtained a decidedly beneficial action by rectal administration. The patient suffered from arthritis deformans of the right hip. A vial of fibrolysin solution was injected into the rectum, and in two to three minutes after the patient noticed the characteristic taste of garlic. At night there was a slight chill, followed by fever, headache, and nausea. Two weeks later a second injection was given, followed by the same reaction. Six weeks later there was decided improvement, so that the rectal use of fibrolysin was continued (one vial every week, diluted in 40 cc. of water). At present the patient has only slight pain and can walk for hours.

In a second case there was a fixed retroflexion of the womb after a difficult confinement. Two or three times weekly vaginal tampons were inserted, saturated with the following solution: Ichthyol, 5 gm.; glycerin, ad 50 gm.—plus the contents of two vials of fibrolysin. After six weeks the uterus was perfectly movable. It is difficult to decide here whether the ichthyol or the fibrolysin produced the desired result.—*Charlotte Medical Journal*.

Book Reviews.

The whole series of Oxford medical publications are so favorably known that they require little notice at our hands. The Canada Law Book Publishing Co., Toronto St., Toronto, are offering the remainder of their stock at 40% discount, thus giving every medical man an excellent opportunity of supplying his library at specially cheap rates. We are reviewing a few of the most important volumes in this number.

THE OPERATIONS OF GENERAL PRACTICE. By Edred M. Corner. Oxford Medical Publications. The Canada Law Book Publishing Co., Toronto.

This is a very useful book for everyone, for it deals with the simple, everyday affairs of a general practitioner's life. It is perhaps the best of the series.

A MANUAL OF VENEREAL DISEASES. By Officers of the Royal Army Medical Corps. Oxford Medical Publications. The Canada Law Book Publishing Co.

Although this book was published three years ago, there is nothing else so helpful that has come to our notice. Every question which could possibly arise is answered by men who are experts both by virtue of their training and their wide experience.

PRACTICAL ANESTHETICS. By H. Edmund G. Boyle. Oxford Medical Publications. The Canadian Law Book Publishing Co.

An interesting and useful book which covers the ground fully without being tedious.

MEDICAL LECTURES AND CLINICAL APHORISMS. By Samuel Jones Gee. Oxford Medical Publications. The Canada Law Book Publishing Co.

Samuel Gee has an international reputation as a physician and a writer, and these lectures are the cream of his work. They should be read by everyone interested in any branch of medicine.

THE TREATMENT OF DISEASE IN CHILDREN. By G. A. Sutherland. The Oxford Medical Publications. The Canada Law Book Publishing Co.

This is an epitome of a larger work by the same author, confined, however, entirely to children. Very concise and practical, the reader will find the work an excellent companion and helpmate.

SURGICAL EMERGENCIES. By Percy Sargent, M.A. Oxford Medical Publications. The Canada Law Book Publishing Co.

This deals with the treatment of those accidents which are constantly happening in every practice, such as burns, fractures, strangulated hernia, etc. It is very full and most interesting.

CANCER OF THE WOMB. By Frederick John McCann. Oxford Medical Publications. The Canada Law Book Publishing Co.

This is the most comprehensive work on the subject that has been published in England, which, of course, says a great deal. At the reduced price everyone can afford to have it.

FUNCTIONAL NERVOUS DISORDERS IN CHILDHOOD. By LEONARD G. GUTHRIE, M.A., M.D., F.R.C.P. Senior Physician to Paddington Green Children's Hospital; Physician to the Hospital for Epilepsy and Paralysis, Maida Vale. London: Henry Frowde, Oxford University Press; Hodder & Stoughton, Warwick Square, E.C. 1907. Toronto: Canada Law Book Publishing Co.

The object of this book is to emphasize the truism that the neurotic child is the father of the neurasthenic adult. Many nervous and other ailments are the outcome of the neurotic or emotional temperament, and all are aggravated thereby. This early recognition of these simple facts by medical men may help to lessen neurasthenia in the rising generation.

The contents of this volume consist chiefly of lectures delivered at various times before the provincial branches of the British Medical Association, and the Post-Graduate College of London. Parts of the section on "Night terrors" are taken from an article on that subject in Allbutt's "System of Medicine."

THE SKIN AFFECTIONS OF CHILDHOOD. With special reference to those of more common occurrence, and their diagnosis and treatment. By H. G. ADAMSON, M.D. (Lond.), M.R.C.P. Physician for Diseases of the Skin, Paddington Green Children's Hospital; Physician in Charge of the Skin Department; (formerly Physician) North-Eastern Hospital for Children; Assistant in the Skin Department, Westminster Hospital. London: Henry Frowde, Oxford University Press; Hodder & Stoughton, Warwick Square, E.C. 1907. Toronto: Canada Law Book Publishing Co.

This manual of 284 pages is intended solely as a practical guide in the clinical study and treatment of skin affections in children. It will be found useful to students of medicine and practitioners in their daily work. It is well illustrated. The book is based largely upon the author's personal experience.

HEART DISEASE AND THORACIC ANEURISM. By F. J. POYNTON, M.D., F.R.C.P., London. Assistant Physician to University College Hospital, and Physician to Out-Patients, the Hospital for Sick Children, Great Ormond Street, London; late Medical Tutor and Medical Registrar to St. Mary's Hospital. London: Henry Frowde, Oxford University Press; Hodder & Stoughton, Warwick Square, E.C. 1907. Toronto: Canada Law Book Publishing Co.

This book describes in outline the more important forms of heart disease, together with the chief methods that are employed in their clinical investigation and treatment. A series of prescriptions are also given. The Schott resistance movements are described, and there is also mention made of the artificial Nauheim baths, both weak and strong, the latter effervescent. This is an excellent work, written in clear and concise form.

INTERNATIONAL CLINICS. A quarterly of illustrated clinical lectures and especially prepared original articles on treatment, medicine, surgery, neurology, pediatrics, obstetrics, gynecology, orthopedics, pathology, dermatology, ophthalmology, otology, rhinology, laryngology, hygiene and other topics of interest to students and practitioners, by leading members of the medical profession throughout the world. Edited by W. T. Longcope, M.D., Philadelphia. Vol. IV. Nineteenth series. 1909. Philadelphia and London: J. B. Lippincott Company.

Always instructive and interesting, the last number of the *Clinics* for the year 1909 is perhaps the best. It contains a number of excellent articles on all manner of subjects, and will suit the taste of every general practitioner, as well as those of our profession who are confined to the specialties. A number of rare cases are recorded, such as epiploitis following the operation for hernia, post-mortem priapism (3 cases), and a solid teratoma of the mediastinum. Besides these, there are many essays on subjects of everyday importance, such as typhoid in children, and indications for operation on the prostate.

W. B. Saunders Company, the medical publishers of Philadelphia and London, have just issued a new edition—the thirteenth—of their handsome Illustrated Catalogue. It contains some twenty new books and new editions, and, besides numerous black-and-white illustrations, there are two color cuts of special value. We strongly advise every physician to obtain a copy—sent for the asking. It will prove a ready guide to good medical books—books that we all need in our daily work.

Correspondence

REFORMING POLICE COURT INEBRIATES

The Editor of THE CANADIAN PRACTITIONER:

DEAR SIR,—The Society for the Reformation of Inebriates aims at two things:

1st. For some years, in a quiet way, it has been trying to reclaim the unfortunates charged in the Police Court with drunkenness. Daily at the City Hall the Society has in attendance a physician and two other officers, who go among these prisoners and try to reach those ready to be aided by the Society.

The drink habit is accompanied by a diseased nervous system, and what many of these people need is medical treatment. The physician in attendance gives this to those found willing to accept it, and in some cases the Society bears the expense of keeping in hospital, for a time, inebriates who must receive such treatment if they are to have any chance in life. The results from such methods have been most encouraging.

2nd. The second great aim of the Society is to reform completely the present mode of dealing with inebriates committed to jail. Toronto needs badly what a good many cities both in Great Britain and the United States now have—a farm outside the city, to which inebriates charged with drunkenness can be sent to be kept at wholesome labor, if possible out of doors, for a time long enough—a good many months in some cases, no doubt—to permit their whole system to get into healthy condition. To send such persons repeatedly for short terms to jail is to give them no real chance. They should be treated as diseased persons and kept long enough to become healthy in mind and body.

It is obvious that the Society has an extensive work on hand. It has further aims, among others the securing of a hospital where inebriety may be treated under favorable conditions—existing hospitals make but slight provision for such a class of patients. But the two aims outlined above are the chief ones before the Society for the moment.

To carry on its work, it requires funds, and your readers are urged to aid efforts that, if pressed forward, will bring new hope and self-respect to many lives. Any sums will be welcomed. If only one dollar can be sent, it will be gladly received. It is hoped

that some donors able to do so will aid this hard-pressed work generously.

Contributions may be sent to the Treasurer, Hon. S. C. Biggs, Confederation Life Building; the Secretary, Dr. A. M. Rosebrugh, Relief Office, City Hall, or to my address, 467 Jarvis St.

Yours truly,

GEORGE M. WRONG,

President.

Toronto, January 10, 1910.

Selected Articles.

RADIUM IN THE TREATMENT OF MALIGNANT GROWTHS.

BY N. S. FINZI, M.B.

The introduction of certain special methods of using radium has provided us with a very powerful agent for the removal of neoplasms—one which will act when other means are of no avail. It is no universal panacea and will not cure every type of malignant disease, but as cases can be cured by it which are inaccessible to any other method—even surgery—it is bound in future to take a very prominent place in the treatment of this terrible complaint. It will not displace surgery in the treatment of many growths, though it will in some, but it will often be employed in conjunction with an operation in order to destroy neoplastic cells which may have escaped the attention of the operator. In fact, I hope some day to show that every operation for cancer should have prophylactic radium treatment as a routine measure. It is as ridiculous to expect to cure every case as it is to suppose that an operation will never be followed by recurrence, but I am confident that we shall later on be able to cure 80 or 90 per cent. of certain types of growth. There is a tendency among some people to condemn the treatment on account of some particular case in which it has failed—possibly a case quite unsuitable. This is most unreasonable, but happens to every new treatment. If, out of a number of cases which were inoperable, one could cure only 1 per cent., I say one would be justified—nay, more, compelled to use it in every such case, providing it did no harm. But I claim that it will cure a far larger percentage than that, and, further, where it does not cure, that it will often relieve. It must, however, on no account be used indiscriminately, as some growths are not improved, at any rate by the quantities of radium we can use at present, and it is even possible that in some we may do harm.

ACTION.

Radium rays exert a selective action on the cells of some tumors, and it is found that this selective action is greatly increased by using lead filters at least 0.5 mm. thick. I believe

that by the use of screens 2 or 3 mm. thick, with the consequent longer exposure which is possible, we can cure growths that cannot be cured when thinner screens are used. By selective action I mean that the tumor cells are destroyed, while the cells of the normal tissue remain uninjured, and the whole treatment hinges on this. Different growths vary in the extent of this selective action, but in some it is indeed enormous, and I have seen growths shrink away, parts of which must have received one-twentieth or less of the amount received by the skin or mucous membrane beneath which they lay, and which itself was unharmed.

There is another factor influencing the selective action, and that is the intensity of the radiation which with the same filter can only be increased by using more radium, so that when one has only a limited amount there will be a certain filter which will give the optimum effect, and probably this will vary in thickness for different tumors. Increase in the amount of radium, on the other hand, will increase the efficiency of the action on every tumor, and will bring within one's power those growths which have proved refractory to smaller quantities. This has been definitely proved by Dominici in a tumor which resisted the action of 2 cg. for a long exposure, but yielded when treated with 5 cg. for a considerably shorter period. Another factor is that of distance. The further off the radium is, the less will be the difference between the dose received by the surface and the deep parts of the growth, but then, even though one might prolong the time of the dose considerably, the intensity of radiation might be diminished beyond the point at which it would affect the growth at all. The action of these so-called ultra-penetrating rays is much more selective than that of X-rays, and this considerably enhances their scope. The possibility of introducing tubes containing radium into cavities and into the tissues still further increases their utility. Though the filtered radiations are a depressant of the activity of the cells of almost all malignant growths, there is probably a point, before or long before the full dose has been given, when the action, if stopped, would be a stimulant to their activity, as with most other cell depressants. I have mentioned that in some cases one-twentieth of the full dose will be sufficient to cause regression, but there are other growths which are only affected by half the full dose. It is in these latter where the stimulating effect is to be feared if an insufficient dose is given.

The histological changes one sees from very penetrating rays are firstly an invasion of the growth by leucocytes without any cell change that cannot normally occur but with an accentuation

of these changes. In a later stage a large number of the cells have disappeared, and their fibrous stroma is left, and finally only fibrous tissue remains. The changes, when only 0.5 mm. of silver is used, include degeneration of the cells as well, especially in the superficial parts, and a great proliferation of the endothelium of the blood-vessels. There seems also to be a new formation of fibrous tissue. In some cases the improvement is apparent after forty-eight hours, especially in the relief of pain, but more usually not much alteration in the size of the growth is seen for two or three weeks, and this goes on for six or more weeks altogether.

GENERAL CONSIDERATIONS.

It is just as important to treat the outlying glands, whether they are obviously involved or not, as it is to do radical operations in surgery. Filtration is essential to secure the selective action. The thicker and denser the filter the more selective the action. A large quantity of radium will cure a tumor which a small quantity will not. A sufficient dose must be given to all parts of the tumor and glands. The cardinal principles then are:—

- (1) Treat the outlying glands and the whole tumor.
- (2) Filter the rays.
- (3) Use plenty of radium.
- (4) Give large doses.

The next question which arises is that of the supremacy of the one-dose method and the frequency of its repetition. Some claim that by dividing up the dose the action on the skin is lessened. But, surely, it is only reasonable to suppose that the action on the tumor is also decreased. Then, apart from the inconvenience to the patient and the operator, it is very difficult to gauge the dose by this method. I find that my dose can safely be repeated in six weeks, but probably experience will teach that this repetition can be made even before the latent reaction from the first dose appears, and I hope some day to increase the efficiency by making the second application in three weeks. At present I go cautiously.

CLASS OF CASE.

Now it is most important to remember that the selective action of the filtered rays varies enormously in different growths; that even two growths of the same kind may behave differently in different patients, and that a similar type of growth in different situations will not react in the same way. To give an instance: an epithelioma of the tongue is usually unsuitable for treatment; an epithelioma of the floor of the mouth will occasionally respond to

large doses, while an epithelioma of the lip will often react to ordinary doses. The behavior of a growth seems, to a certain extent, to depend on its histological structure, and we may be able to make more of this presently when we have more experience and data to go upon. The size and situation of the growth is of much less importance than this, but under certain circumstances may render it unsuitable for treatment by making it inaccessible. It stands to reason, however, that, in a suitable case, the earlier in the course of the disease it is treated the better, and this is the basis of treatment to prevent recurrence.

EPITHELIOMA.

Taking, first of all, rodent ulcer, the cure of this, when it can be reached at all, is as certain as anything in medicine, and anyone can improve his statistics by including this class of case.

With regard to squamous epithelioma, that occurring on the vulva is, in my experience, quite unsuitable for treatment; in fact, I am not certain that the growth is not sometimes accelerated.

Epithelioma of the tongue is only curable in a very early stage, when it ought to be operated on, and as soon as it has begun to infiltrate the muscles it is useless to treat it by radium. This fact is interesting because, though in the early stages it will almost invariably be wiser to adopt surgical measures, it shows the possibility of dealing with early stages of growths which are later refractory, and so with remnants left by the surgeon, by prophylactic applications, and also the possibility of radium supplanting surgery in the early stages of some forms of the disease.

Epitheliomata of the floor of the mouth will sometimes respond to large doses. Here, again, I could never recommend the treatment of an operable case, and I expect we shall get better results from an alliance of the radiumologist with the surgeon in both operable and inoperable cases. This disease is treated both from inside the mouth and outside, under the jaw.

Epitheliomata of the lips, buccal mucous membrane, palate, pharynx, and nose are suitable for radium treatment. In these cases the tube is held against the growth by various devices, a piece of stiff flexible copper wire being very useful. In the case of pharyngeal growths low down, an esophagoscope tube is employed. The desirability of treating operable growths must be decided on the merits of each case, and the rate of growth and histological structure will have a great influence on the decision. At any rate, disfiguring radical operations may be avoided by suitable radium treatment. Do not forget to treat the glands, even if not enlarged, in these cases.

Epithelioma of the larynx ought to be treated by the filtered radiations in every case. In the intrinsic form the delay of a month or six weeks, which is needed to see if there is improvement, will do no harm, as the disease spreads very slowly, while, in the extrinsic form, anything ought to be tried to avoid the operation of laryngectomy, which leaves the patient considerably crippled. This disease is treated from outside, and, except in very stout patients, one can get within a few millimetres of the growth. Until recently I have only had one case of this disease—a patient in whom a tracheotomy had been performed about a year before, and in whom the growth was so large that it was pressing on the esophagus, so that he could only take food through a nasal tube. Within forty-eight hours he was able to swallow. He died of toxemia a month after, but the power of swallowing remained until the end.

Epithelioma of the skin is suitable for treatment, even if rapidly growing. If ulcerated, one can give very large doses to the ulcerated portion without fear of damage: for instance, using my apparatus with 1 mm. of lead, $1\frac{1}{2}$ mm. of silver, and 2 mm. of indiarubber. I should not hesitate to give a dose of forty-eight hours to an ulcerated epithelioma, though the dose to a healthy skin is only thirteen to fifteen hours.

CARCINOMA.

To deal with the most common form—carcinoma of the breast—an inoperable case of this is often suitable for treatment. I have seen disappearance and diminution of nodules of this nature, and have seen a case where pain from pressure on the nerves supplying the arm was completely relieved after forty-eight hours from the first treatment. Owing to the frequency of mediastinal involvement, it is necessary to obtain instantaneous radiograms to show the extent of this. If one decides to treat such a case with radium, esophageal applications are made (using 1 mm. of lead at least), the tube which the patient is made to swallow being got into position by paying out a silk thread to which it is attached, while she is examined with the X-rays until the active part of the tube, the lower end, comes into the centre of the mediastinal mass. If there are only discrete glands which cannot be seen on the screen, the distance is determined on the skiagram in relation to the aortic arch, and the radium then passed to the correct distance. The very slow growing mammary carcinomata may sometimes be treated by the radiations without operation. Yet they will not always respond, and occasionally the rapidly-growing ones will. I cannot yet understand the reason of this. After every operation for carcinoma of the

breast, several radium tubes, each containing 5 eg., and encased in 1 or 2 mm. of lead, should be left in the wound in various parts, to remove any cells the surgeon has left, and the mediastinum should be treated from the esophagus, whether obviously involved or not.

Carcinoma of the esophagus is a disease in which this is the only method which holds out any hope. It practically always relieves, and we hope in time to cure some of the cases. They are often very advanced when we first see them. I have worked at this question with Dr. William Hill, and the only early case we have had is very much improved. The applications are usually internal, but when the growth is just below the cricoid cartilage, applications outside the neck can be made as well. We have seen great relief from only external applications in one case, but he, unfortunately, had extensive disease below the strictured part. An X-ray examination must always be made in these cases, and it greatly helps one in the application.

Carcinoma of the rectum has shown itself particularly responsive to treatment in most of my cases. If possible, the tube is placed in the stricture and left there for considerably more than an ordinary dose; but if this cannot be done, it is applied to the surface of the growth or inserted into its substance.

In one case of carcinoma of the prostate which I have had, the result was extraordinary, the whole tumor having completely disappeared.

Carcinoma of the stomach and intestines would probably react, but I have no experience of them. The latter will generally be better treated by operation.

Carcinoma of the cervix reacts only with difficulty. Dominici has employed it first of all to render operable a growth which was originally inoperable, and then, after removal of the growth, to apply it to the scar, and he seems to have had successful results from this. Personally, I should be inclined to leave a tube *in situ* at the time of the operation, and give one or two further prophylactic doses subsequently.

Carcinoma of the body of the uterus ought to be most favorable, but I have had no case until a few days ago.

Carcinoma of the penis, again, has been very successfully treated in Paris, but I have had no case of it.

SARCOMA.

Of this disease I have little experience. Successes have been obtained by other observers, but many forms must be unsuitable, on account of the rapid metastases. In one case I treated there was no improvement. Some of my successful cases of

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Original Communications

THE VAGARIES OF FIBRO-MYOMATOUS TUMORS.*

By J. F. W. ROSS, M.D., C.M., TORONTO.

Mr. President and Members of the Brant County Medical Association:

I regret that owing to the shortness of the notice it was impossible to prepare such an address as befits the occasion, and I offer my apologies for the imperfect presentation of the subject. I decided to look back into the years that have gone and endeavor to pick out some points that may prove of value in a consideration of the effects of fibro-myomatous tumors upon the life history of women.

It was my privilege in 1878 to hold the position of House Surgeon at the Toronto General Hospital; that is now 32 years ago. It is interesting to watch the evolution of practice that has taken place in that time, and there is no department in surgery in which the changes have been more varied or the practice has been more improved than in the surgical treatment of fibro-myomatous tumors.

During a pilgrimage to the Mecca of abdominal surgery, Birmingham, about the year 1889, I had the privilege of assisting that great pioneer, Mr. Lawson Tait, with many of his operations during a period of some months. While ovariectomy for the removal of ovarian tumors had been perfected so that the mortality was greatly reduced, the operation of hysterectomy for the removal of myomatous tumors was still in its infancy, and was accompanied by a high death-rate. This was so great that one Edinburgh surgeon looked about him for some other remedy than the knife, and began the use of the electric current as advocated by Apostoli of Paris. After much investigation and careful trial this treatment was not satisfactory and proved to

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be at times dangerous, owing to the degenerative changes that it was liable to set up in the tumors. Many of us looked about for some improvement of surgical technique, and eventually the operation at present adopted was evolved, and is now performed with as low a mortality, in skilled hands, as the operation of ovariectomy. It is my opinion that such operations should only be undertaken by men of special training, in well equipped operating rooms, under the most advantageous circumstances. About the year 1890 the operation for removal of fibroid tumors of the fundus uteri was performed with the assistance of the Koeberle serre-noeud. Tait used as a primary precaution against hemorrhage a rope clamp, of which the rope was made to encircle the tissues about the cervix, after the peritoneum together with the bladder had been stripped down off the tumor surface; the Koeberle serre-noeud was placed so as to constrict the cervical structures, taking care to avoid the ureters, and after a severance of the ovarian and uterine arteries. The serre-noeud produced constriction of the stump and gangrene of its distal portion, notwithstanding the tanning effect produced by the application of Perchloride of Iron dissolved in Glycerine. The patient did well until about the sixteenth or seventeenth day when a leakage took place from this foul mass into the general cavity of the peritoneum and a general septic peritonitis resulted, followed very shortly by the death of the patient. Even after recovery from such an operation an immense funnel-shaped granulating opening was left, through which a subsequent protrusion of the intestines took place; this was certainly anything but ideal surgery. We then became bolder and found that a direct dissection down on to the vessels enabled us to control the hemorrhage, and that the use of cat-gut sutures to the stump controlled any little oozing that might be caused owing to a lack of ligation of the azygos vagina artery. The operation was then still further improved by a readjustment of the cut peritoneum over the surface of the stump, so that the stump became with the ligatures applied, practically extra-peritoneal. At first it was considered desirable to place a drainage tube in the cul-de-sac of Douglas, but in later years even this was found to be unnecessary. In my hands and those of my assistants these operations have now become entirely satisfactory and the mortality is almost nil. It is essential, of course, that the operator should see to it that all hemorrhage is properly controlled before the abdominal cavity is finally closed. There is another point in favor of operation, namely, the fact that the tumors are not now allowed to grow to the gigantic proportions of those tumors

formerly met with, and furthermore we do not have such extensive adhesions to deal with. As a consequence of the great success of the modern operations I fear the pendulum has swung rather too far to the other extreme, and that now young women are practically unsexed and are denied the opportunities of motherhood owing to the rather ruthless use of the knife on fibroid tumors as soon as they make their appearance. As fibroid tumors have vagarious ways it is desirable that we should be fully aware of these peculiar changes, in order that we may deal with these cases more intelligently. Let us take up the question systematically.

Position.—Fibroid tumors have been named according to their position. The classification adopted has been sub-peritoneal, intramural and submucous; we have also myomatous tumors growing from the myomatous structures about the cul-de-sac of Douglas in the broad ligament and in front towards the bladder; we have also fibroid tumors growing in either the anterior or posterior lip of the cervix.

(a) *Sub-peritoneal Tumors.*—Sub-peritoneal tumors seem to have certain characteristics not met with as frequently in the others; they have a tendency to become pedunculated and may often be found roughened on the surface owing to calcareous degeneration, and as a consequence of this they may produce intraperitoneal dropsy that simulates the dropsy found accompanying malignant disease in the peritoneal cavity; they may become fixed to other organs and may eventually derive their blood supply through the adhesions in the new situation; they may become twisted and gangrenous or gangrenous owing to thrombosis of the vessels.

(b) *Intramural Tumors.*—Intramural tumors frequently give rise to menstrual pains and increased menstrual flow before they can be made out by the examining finger. When the uterus of a young unmarried woman is found somewhat enlarged and when this enlargement is accompanied by menstrual pain and increased flow, we must suspect the presence of an intramural fibroid. The ultimate destiny of the intramural variety is generally sub-peritoneal or sub-mucous, as the constant contraction during menstruation, producing the pain already spoken of, tends to force the little nodule outwards or inwards.

(c) *Submucous Tumors.*—The submucous variety may be very small or may be large enough to simulate pregnancy at the 4th or 5th month, or even later. I have on two occasions been forced to dilate the cervix and introduce my finger into the uterus to satisfy my mind that the case was one of large sub-mucous fibroid, filling the uterine cavity, before proceeding to

amputate the uterus supra vaginally through the abdomen. I have seen similar cases in the practice of others, and on two occasions they simulated a pregnancy at full time. In each of these the abdomen was closed, as the operators felt they had made a mistake and that the cases were cases of pregnancy, and in each case a few days later the uterus was removed by a second operation, thus readily demonstrating how such submucous edematous growths can simulate pregnancy. Many of the submucous growths cause alarming hemorrhages and continued illhealth; eventually they may become polypoid and may be extruded from the uterine cavity into the vagina or forced outside the labia. I removed, at intervals covering several years, three such polypi from one patient.

(d) *Other Varieties.*—Those growing in the neighborhood of the cul-de-sac of Douglas, either in front or behind the rectum, become a very serious bar to delivery, and I have performed cesarean section on three occasions, owing to the presence of this condition. Growths growing in the cervix, either in front or behind, may also become a serious menace to delivery; I have, however, seen such large growths gradually compressed and pushed above the pelvic brim and the patient delivered without mishap when we were quite prepared to perform cesarean section. Tumors growing in the anterior lip of the cervix produce serious bladder disturbances; retention of urine being one of the most common of these. The removal of growths situated either in front or behind the cervix or in the cervix itself is necessarily fraught with much danger; in front damage to the ureters, behind damage to the pelvic vessels. On one occasion I was forced to remove a tumor growing in the anterior cervical lip and causing retention of urine, and after the removal there was an opening in the vagina large enough to admit a fist. The patient was prepared for death upon the table, but fortunately rallied from the shock and made a good recovery, contrary to the expectations of all those connected with the case.

Changes in the Tumor:

Congestion.

Edema.

Cystic degeneration.

Necrosis with or without suppuration.

Calcareous change.

Malignant disease.

(a) Myxomatous degeneration.

(b) Sarcomatous degeneration.

Congestion.—No matter where situated in the pelvis, fibroid

tumors are affected by the presence of an intra or an extra uterine pregnancy and by menstruation; in either of these conditions the capsule of the tumor carrying the blood supply becomes much congested, and, as a consequence, for the time being, the tumors increase in size; owing to the fact that pregnancy is continued over a period of nine months the congestion remains continuous and the growth of the tumors is much greater; the menstrual congestion coming on but for a short time and ceasing does not add so rapidly to the size. In cases of pregnancy I have often considered that it is a race between the fetus and the growth as to which can grow the fastest. It is well to remember that ovarian tumors frequently cause a temporary cessation of menstruation, and that when such a temporary cessation of menstruation occurs in the presence of a fibroid tumor before the menopause, it is always due to pregnancy; this is an important point, as under such circumstances the uterine sound should not be used; it is oftentimes the unexpected that happens, and a woman with a fibroid tumor may go for years without becoming pregnant, and may then suddenly miss a menstrual period. When examination is made the tumor will be found softened and considerably enlarged.

Edema.—The edema of fibro-myomatous tumors is an extraordinary condition not seen anywhere else in the body; fluid is poured out in the meshes of the myomatous tissue and a separation of the long involuntary muscle fibres takes place; the tumor looks as if waterlogged, and on the surface has a sense of false fluctuation; this sense of fluctuation so closely simulates genuine fluctuation that the presence of disseminated and not encysted fluid can oftentimes only be made out by an incision into the tumor. The cause of this edema outside of that form that accompanies myxomatous degeneration is not very well understood, unless it is due to an obstruction of the blood supply or a damming back of the venous circulation. I have seen one such tumor 60 pounds in weight; I saw another enormous tumor removed from a woman in England, where it seemed as if the woman was peeled away from the tumor, and I have myself removed a tumor of upwards of 40 pounds in weight. We do not see these edematous tumors as frequently now as we did a few years ago, owing to the fact, as already stated, that hysterectomy and ablation of the growth is not fraught with such a high mortality; the mortality having now been reduced, in skilled hands, to equal that of ovariectomy. It is extremely difficult to say when the edematous tumors are myxomatous and malignant and when they are simply myxomatous and innocent.

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I always feel suspicious of the malignancy of an edematous fibro-myoma. In the cases in which I have seen the disease return in the form of pseudo myxoma, in the peritoneum there is nothing to indicate that the tumor was malignant at the time of its removal. A microscopical examination should be made of all edematous fibro-myomata removed. Enormous edematous fibro-myomatous tumors may entirely disappear, or almost entirely, subsequent to the onset of the menopause. I have a distinct recollection of two patients who had such edematous tumors. One of them declined to submit to surgical measures until after the marriage of her daughter. She was confined to the house for about two years with terribly swollen limbs and enormously distended abdomen; she subsequently recovered perfect health, and it is not long since I met her, a very active woman for her age. The other woman was an invalid for several years, and the tumor in her case similarly disappeared and she was restored to health. Of course it is a terrible penalty to pay and we do not always have such a favorable termination, but these patients were seen before the days when supra vaginal amputation of the uterus had such a small mortality as at the present time, and surgeon and patient alike dreaded operative interference.

Cystic Degeneration.—The cystic degeneration of these tumors is not a true cystic degeneration originating in glandular structure. Small hemorrhages take place here and there into the substance of the tumor and these hemorrhages are followed by the formation of cysts. There seems to be a difference between ordinary cystic degeneration of fibro-myomatous tumors and the true fibro-cystic tumors of the uterus. Cystic tumors of the uterus are very rarely met with, whereas cystic degeneration of fibroid tumors is not infrequent; in either case these growths require to be removed, as they have a tendency to increase in size or to undergo necrotic change. I have seen but two cases of marked fibro-cystic tumors of the uterus, and we have not a single specimen in our Pathological Museum. I removed one such tumor from a negress in one of the hospitals in Pittsburg some years ago, and the other tumor I saw removed by Mr. Lawson Tait.

Necrosis With or Without Suppuration.—This is a very serious condition and imperils life. The first case of necrosis of a fibroid tumor I met with was one into which a hand and arm had to be introduced through the vagina and up into the tumor to dislodge the broken down tissue. The patient made a very slow but excellent recovery. Necrosis occurs as a consequence of

thrombosis of the blood vessels; this thrombosis seems to be produced by excessive congestion and increased coagulation of the blood, such as occurs in pregnancy; by pressure produced by uterine contractions subsequent to the administration of Ergot; by constriction of the pedicle of a myomatous polypus, and by a disturbance of the parts such as is unavoidable in the performance of an abdominal operation. I have seen numbers of cases of gangrene and necrosis of fibro-myomatous tumors before and after delivery; when it occurs before the delivery of the patient the condition is particularly dangerous; these patients are liable to become pyemic and to lose their lives. If delivery has taken place there is then a chance that the contents of the sloughing tumor may be extruded and that the sloughing tumor may be reached by the surgeon. The treatment under such conditions should consist in as thorough a cleansing of the parts as possible, and a removal of as much of the necrotic tissue as possible. The antiseptic that is perhaps most serviceable is bichloride of mercury; this should be used as a douche into the uterine cavity once or twice a day, and perhaps it may be considered advisable to pack the uterine cavity with iodoform gauze; a hysterectomy under such circumstances is not to be thought of; to open up by incision a large area necessary in performing this operation in the presence of a fetid and extremely poisonous gangrene is very unwise. When, during pregnancy, a tumor becomes necrotic, an abdominal hysterectomy will give the best results, and is then indicated. Operation must not be long delayed if we hope to save the patient; necrosis in such cases is generally indicated by a sudden tenderness over the tumor, accompanied by high elevation of temperature, and accompanied in all probability with chills, together with increased pulse rate and sudden rapid increase in the size of the growth. The necrosis of fibro-myomatous tumors is liable to occur after the removal of ovaries and tubes, or in other words, after the operation of oöphorectomy for fibroid; sometimes the tumor becomes inflamed under such circumstances, but does not become completely necrosed. After the removal of a fibroid tumor I have been surprised on a number of occasions to find evidence of old necrotic changes. When polypi are extruded from the cervix or from the vagina they are liable to become gangrenous. In the early stages of such gangrene the tumor simulates very closely malignant growth, and it is necessary for the surgeon to discriminate between the two; in either case there is a very considerable malodorous discharge, frequently tinged with blood poured out from ulcerated areas. When such tumors have been

removed the differential diagnosis can readily be made by making an incision into the tumor substance, and by examining a section of the tumor under the microscope. These polypi can be very readily removed, as the thrombosis of the vessels at the pedicle prevents hemorrhage, provided the pedicle is separated below the upper limit of the occlusion of the vessels. I have seen such black tumors as large as a man's head, between the thighs, entirely outside the labia. The so-called red degeneration is nothing more nor less than the early stage of necrotic change; the tissue has the appearance of being acutely inflamed and hence looks red.

Calcareous Degeneration.—Calcareous degeneration is more frequently found in the sub-peritoneal variety of fibro-myomatous growths; these growths become roughened on the surface, and owing to the presence of intraperitoneal fluid they are liable to simulate malignant disease; they may be found bobbing about in the fluid, and may as a consequence feel much like fetal parts. I have several times operated on such growths, when a diagnosis of probable malignancy had been made, and we were afraid that operative interference would be useless; under such circumstances it is always wiser to open the abdomen. When the tumors are removed, often by means of ligatures round the pedicle, the peritoneal dropsy disappears and the patients resume a normal condition.

Malignant Change.—Myxomatous degeneration in fibro-myomatous tumors is in my experience fairly common in proportion to the number of cases that undergo malignant change. I have never seen any other malignant change except myxomatous degeneration and sarcomatous degeneration; myxomatous degeneration is particularly prone to recur after removal of the tumor; this recurrence presents some interesting features; the peritoneal surface of the intestines and the parietal walls appear as if injected with gelatine, the bowels become stiffened and partly rigid as a consequence of this thickening of the coats; the disease has been called pseudo-myxoma-peritonei. The patients gradually become weaker and weaker and finally die with some of the symptoms of intestinal obstruction. When sarcomatous degeneration occurs in the tumor the tumor becomes rapidly enlarged, there may be some elevation of temperature, the patient's general health is not particularly affected, and there are no other changes to be noted; it is only after the tumor has been removed and has been cut into that the sarcomatous change is determined; the microscope then completes the diagnosis. After removal of the tumor the patients may be free from re-

currence for a considerable time, or the disease may recur at an early date. I have never seen carcinomatous degeneration of a fibroid tumor, but feel satisfied that when carcinomatous disease is met with in the presence of a fibroid tumor it is merely a coincidence and has nothing to do with the presence of the fibroid. I have always found the carcinomatous growth growing definitely from the glandular structures of the endometrium.

In the presence of pregnancy fibro-myomatous tumors do not seem to have any particular tendency to produce miscarriage. When it is considered desirable to empty the uterus, owing to existing circumstances, it is usually necessary for the surgeon to procure an abortion. I have found it desirable after one or more consultations to produce miscarriage in a number of cases. If a young woman has had no children and is troubled with a small myomatous tumor, I believe that in most cases when the tumor has reached an important size that miscarriage should be produced, and, as a consequence, she is given the benefit of the subsequent involution. Many fibro-myomatous tumors disappear after the first miscarriage; I have seen them disappear after labor at full term; in fact they disappear, or almost disappear, as a consequence of the process of involution. If a woman has not had progeny and on the other hand is willing and anxious to submit to cesarean or Porro cesarean operation at any time when it is found to be necessary or desirable, in order that the life of the mother or of the mother and child shall be saved, her wish should be gratified. Under modern conditions cesarean operation may be safely performed, but it must be remembered that it may be necessary, in the presence of fibroid tumors, to perform the Porro cesarean operation in order to control hemorrhage and thus remove from the woman all chance of subsequent motherhood. I have advised young women with fibroid tumors of small size to become married as a prophylactic measure, with the hope that either childbirth or miscarriage would be beneficial by checking the growth of the tumor. To illustrate my point, let me state further that my first experience was obtained by a rather rude awakening. A missionary lady from Africa, between 35 and 40 years of age, married. I saw her, in consultation with the late Dr. J. E. Graham, and we found a pregnancy nestled in between three large fibroid tumors; miscarriage was produced, and I asked her to return at a subsequent date, in order that I might remove the uterus. During the process of involution she was advised to take a certain treatment, and the treatment got the credit for what occurred; the tumors almost entirely disappeared, she again became preg-

nant and was delivered of a living child; surely this should be a warning to those who advise the removal of small myomatous growths. It is argued that these growths should be removed, for fear that they may become malignant; I consider that this is erroneous teaching, as the growths seldom become malignant, and to prevent carcinomatous disease of the uterus we would be compelled to remove the organ from every woman. After the childbearing period is passed and after the growth has reached such proportions that the chances of motherhood are nil, then I believe the surgeon is justified in operating. In patients who have been suffering great loss of blood from time to time I have been able to tide them over until the coming polypus has made its appearance, when its removal cures the patient, relieves her of her symptoms, and restores her to health.

And now, in conclusion, let me say that as motherhood is the rounding out of the life history of woman, and as the uterus is an organ that is essential to this end, we must, as physicians and surgeons, see to it that it is not ruthlessly mutilated by the knife, but rather that every effort shall be put forth to preserve it intact, and to improve the health and save the life of the patient.

SOME NOTES ON FUNCTIONAL NEUROSES.*

BY DR. CAMPBELL MEYERS.

As the proposed Psychiatric Clinic is being discussed this evening I thought some notes on the Functional Neuroses, especially in regard to the inadvisability of treating these in Psychiatric Clinic, might be of interest to the Section of Medicine of this Academy.

There are, I think, two points of view especially to be considered in regard to the treatment of the Functional Neuroses, viz., the Theoretical and the Clinical. In consideration of the theoretical, I would first like to direct your attention to some of the current theories in regard to a common Function Neurosis, viz., Hysteria. First we have the *Psychological Theories* and these have much in common, and are the most widely accepted. Binet, as a result of his experiments, concluded that in hysteria there was a condition of double consciousness, that is, two streams of consciousness flowing side by side, relatively independent and separated by Amnesia. Next, we have the theory of Dr. Pierre Janet, who believes hysteria to be entirely a mental malady. The essential points in his theory are the tendency to disintegration, splitting up, or, as he says, doubling (deboulement) of the personality, and the identity of the hysterical and the hypnotic states, based upon the common factor of suggestibility. The theory of Sides is similarly a dissociation theory, but he lays more stress upon the process of dissociation, and the independent, automatic activity of the sub-conscious ideas or systems. The theory of Freud, the most important and significant feature of which is the tracing of every cause to a trauma of sexual nature; not only does the hysteria always originate in sexual traumatism, but the original traumatic moment must have been in childhood—in the pre-pubescent period. Freud has traced this class of trauma to very early life, three and four years of age, and in one instance actually to one and one-half or two years. If we turn to the *Physiological Theories* we find, chief among these, the definition of Sollier, who defines hysteria as follows: "Hysteria is a physical, functional disturbance of the brain, consisting in a torpor or sleep, localized or generalized, of the cerebral centres. This definition, has, I believe, much to recommend it. Again, there are the *Biological Theories*, among which may be mentioned that of Snyder, who holds hysteria

*Read at Medical Section of Academy of Medicine, Toronto.

to be a mode of reaction in persons of naive, simple, infantile mentality. A mentality lacking in development, and defective in judgment and critique. Finally we have the Clinical Theories, and chief of these is that of Babinski. The fundamental proposition of Babinski is that the hysterical phenomena are distinguished by the fact that it is possible in certain subjects to reproduce these phenomena by suggestion with rigorous exactitude, and cause them to disappear under the influence of persuasion. He suggests, therefore, the term *Pithiatism* for this disease. I cannot conclude these theories without mentioning that of Bernheim, who expresses the view that the disease hysteria, such as is described, does not exist. So much then for the theoretical side of one of the common functional neuroses. Let us now turn to the clinical side and observe the results of treatment of the functional neuroses. (1) In a Psychiatric Clinic and (2) in a Pavilion of a General Hospital, in which the insane as well as the functional neuroses are treated.

In the "Report of the Commission on the Methods employed in caring for and treating the Insane," published in 1908, the formation of a Psychiatric Clinic in Toronto was recommended, presumably along the lines of the Psychiatric Clinic in Munich, in which much excellent work is being accomplished. The question of the admission of nervous diseases to these clinics, with which the Commissioners state they are heartily in accord, is spoken of as follows by Prof. Kraepelin: "In a number of newly formed clinics, the treatment and teaching has also been extended to the province of nerve disease. Griesinger, and after him above all Westphal, and his school have strongly emphasized the fact that mental diseases simply form a special group of nerve diseases, and therefore may not be separated from them. We hope to conquer a large province, which up to the present the isolation of the insane asylum has made difficult. The large group of so-called nervous diseases, that is, the patients who really need the help of the Psychiatrist and who are not in the ordinary sense mentally affected or who could not be taken to an asylum, we claim with a perfect right." As a result of their investigations the Commissioners state (page 11), "It is recommended that all acute mental and nervous diseases, of whatever form or cause, be admitted to these hospitals."

In view of these statements the question naturally arises, does the Psychiatric Clinic afford the most suitable measures for the treatment of the Functional Neuroses? I believe it does not, and my reasons are as follows:

(1) If we consider the treatment of the most frequent

functional neuroses with which we have to deal, viz., Neurasthenia, what do we find in relation to its treatment in the Munich Clinic, remembering always that the study of mental and nervous diseases is more advanced in Germany than in Canada, and consequently there would be less prejudice in the minds of the people against going into a Clinic where the insane are treated. The "Report of the Royal Psychiatric Clinic in Munich," which was published in Canada, 1908, shows that not a single case of neurasthenia was treated in this Clinic. It might be said that perhaps neurasthenia is diagnosed differently in Germany to what it is in this country, and in reply to this I would state, that in the attendance of the out-patient department of this Psychiatric Clinic, that neurasthenia is at the head of the list of diseases. Why then was it not treated in the Clinic? Evidently because, even in Germany, it was not considered expedient to do so. If we now turn to another common functional neurosis, viz., Hysteria, what do we find in this Report? This states "That the most frequent cause of admittance to the Clinic, particularly in the case of women, is hysterical convulsions, young girls who had an attack after a scene with their lovers; men who were seized with an attack during a row, and at times under the influence of alcohol, were brought to the Clinic. Next to these attacks, states of bewilderment, and in the case of the women also excessive outbreaks of emotion, with violent excitement, are responsible for bringing the patients to the Clinic." Surely it would be fair to assume that the physician or the friends of these patients considered them at least temporarily insane and sent them to the Psychiatric on this account. The results of treatment of these cases is interesting. The Report says that, "By far the majority of patients could be dismissed after a short residence in the Clinic," and again, "Of the eighteen patients, sixteen were allowed to go home."

If we now turn to Epilepsy, we find in the Report that "A large number of persons (16% of the total number of patients) was brought to the Clinic on account of intoxication," or again, "A great number of our patients often wanted to commit suicide." We find in fifty men and nine women attempts at self-destruction by hanging, drowning, poisoning, etc. There is still one other class of patients admitted to the Clinic in which functional nervous troubles perhaps play a small part. These are classified as Psychopathic Personalities. The Report states in regard to the cause of their admission: "The most frequent cause for the bringing of the patient to the Clinic was an un-

successful attempt at self-destruction or threats to do so. The result in these cases was that eighty-three out of one hundred and five cases could be allowed to return to their homes."

I have quoted this Report at some length, as the Psychiatric Clinic in Munich is considered, I believe, the best or one of the best in Germany, and a consideration of the type of functional neuroses which are admitted there, as well as the results of treatment, would enable you to judge, from a practical standpoint, whether such a solution, for the treatment of the functional neuroses in Canada would be satisfactory or the reverse. I hold such a solution would be a fatal mistake.

I would now desire to direct your attention to a General Hospital in which mental and nervous diseases are treated in one of its pavilions. I refer to Pavilion F. of the Albany General Hospital. Here, in an up-to-date building, insanity has been treated with marked success for the past seven years. If, however, we examine into the last report we find that during this whole period less than 3% of neurasthenia and less than 2% of either hysteria or epilepsy were admitted. The other functional neuroses were admitted in even fewer numbers. As this is the result, where treatment takes place in a General Hospital, how much greater would the difficulty be in persuading persons suffering from the functional neuroses to go to a separate institution, in which the insane are treated. The above are the definite results of endeavoring to treat mental and nervous diseases in the same building, and surely these results are convincing proof, that the attempt to do so must end in failure. Then why begin it in Toronto? There is, on the other hand, a clinical method of treating the functional neuroses, which I believe is the most applicable to Canada to-day, viz., their treatment as a separate department of internal medicine. It is now nearly four years since this method was inaugurated by the formation of Nervous Wards for the treatment of the functional neuroses at the Toronto General Hospital. While only a small beginning has been made here, the results demonstrate that the principle is eminently satisfactory. The insane are not admitted for treatment, any doubtful cases of insanity being transferred to the asylum as soon as sufficient observation has confirmed that diagnosis. The study of these cases in which the borderland *stage* of their disease has been reached is most interesting, and often fills one with regret that suitable active measures had not been taken earlier to avert, when possible, this already advanced stage of their disease. The absence of the insane in the building allows the treatment of the hysteria, without the constant sugges-

tion of mental disease, and both this class of patients and the neurasthenic come without the least hesitation to these wards. Hence these patients will come *early*, a most important consideration in view of success in their treatment. The results of treatment are such as could only be obtained in a separate department, and under the charge of those specially interested in this branch of medicine. Not that I think for a moment that the treatment in the general wards of this hospital is in any way inferior to the best on this continent, but the details of treatment, so essential to success in these cases, cannot in general wards be properly carried out. The proof of this may be seen in the fact that during the past year, especially, a number of patients suffering from functional neuroses, who were treated for weeks and sometimes for months in the general wards, without any benefit, were, in a corresponding time, discharged well through treatment in the nervous wards.

In collecting these few and very imperfect notes on the functional neuroses I have endeavored to lay before you some views, both from a theoretical and a clinical standpoint. I would ask you, however, to remember that the theoretical views must and will change, while the clinical type of disease must ever remain the same, and consequently its treatment merits the greater attention. For example, because hysteria may theoretically be considered a mental malady, it does not follow, that clinically, it can be best treated in the same building as the insane. The attention now given by the profession the world over to the functional neuroses is most gratifying. Had this attention been given earlier, in all probability Christian Science, Dowieism, etc., would never have come into existence. A new era, however, has come, and let us hope that in Canada a careful consideration of all available information, derived from every source, will enable us to make each step in advance on a solid foundation.

MEDICAL THOUGHTS, FACTS, FADS, FANCIES AND FABLES.

BY S. SPRAGUE, M.D., PERTH, ONT.

Is osteopathy, which ranks as second place to Christian Science, but which has not its back bone—and recognized as among the modern cults, to displace and disgrace our noble profession, its disciples and the work of our honored and well established and endowed national universities—to be allowed a legitimate and legal standing in this enlightened age in this our province? When I consider the fact, duly noted in the public papers, that Major Craig, of East Wellington, has presented a petition from the Board of Trade of Mount Forest, praying that an institution of osteopathy there should be incorporated, my reflections are many, and my first view is: Does Major Craig, as M.P., consider he is in any sense advancing the best interests of medicine—if osteopathy is medicine? Will not the intelligence of the good people of Mount Forest and the M.D.'s. of the electoral district embracing the Wellingtons oppose such attempts? Is medicine so debased that an M. P.—in this our province—would and should seek to establish in the interests of a Board of Trade an institution for osteopathy? Is an osteopathy *institution, college or university*, whose work is that of graduating *Doctors* in osteopathy, to be allowed in this Province, where flourish the Toronto University, Western University and Queen's University, with medical faculties? If we—our Parliament—are to grant this Mount Forest request, Chiropractics, Vito-pathy, Christian Science and other modern and visionary cults, mad-nesses and delusions of crowds will attempt similar appeals for legislation.

To those who are ignorant of osteopathy and are indifferent to the attempts made by fakirs, under various namings and titles to hurt the medical profession, we would refer McKay's work, "Popular Delusions," as illustration that this progressive age is not silencing the work or ambition of the Iconoclast or Socialist in demolishing time honored institutions—even our universities, the pride of our country—and attempting to place within their sacred walls such mud gods as those named. The Emmanuel movement, encouraged by a few reverend gentlemen, who style themselves more frequently *Doctors* than *Rev. Doctors*, is in evidence, according to one writer of the degeneracy of the church's influence, such I fully endorse and also believe that

they and such as they are jealous of the growing power and influence of the cultured and cosmopolitan doctor; whose profession demands men of the best manhood and highest culture; whose practice knows no one church; whose ideals are lofty and that they lift all there is of life in altruistic labors, and that they will bring the glory of and honor of the nations into medicine.

Medicine, more ancient than the Golden Fleece or Golden Eagle, whose history is well blended with that of the earliest of divinities; whose position is that of "First of all arts," and without whose association and brilliancy all others would sink in gloom is, and has been ever assailed, not only by the church, which during its embrace smothered and paralyzed its ambitions, but by money and molluscous men, who increase in numbers and impetuosity to destroy the work of our patient and successful workers and the profession at large. To state a fact, we have those in our ranks, but they are few, yet considered leaders, who most shamefully have befouled their own nests, and the dejections thereof have been and are being used to fertilize cults—antagonistic to medicine, encouraging to superstition, and blots on works in medicine as taught by the masters.

To further emphasize my statements, I state that the deficient therapeutic knowledge, too often possessed by recent graduates, and no ways improved by the scanning of the ordinary medical journals and their advertisements, has encouraged theorists and "the don't know how's" to listen to the destroying angel, known as medical nihilism, and to listen silently to the awakenings of embryonic cults, the vaporings of fakirs, parasites, defamers, and blear-eyed outcasts and socialists of the dynamite brand.

The fool says there is no God, and the same fool says "drugs are of very little use," and by this statement an endorsement is made to the fact that he knows very little of drugs. For, however great his acquirements in anatomy, physiology, chemistry and pathology, he has not learned this fact, that they all conserve to a common centre—and that centre is therapeutics, the constant study in text books of master minds—not of price lists of drug houses—by those who are honoring and have honored medicine and their own names, and have been as divine blessings to the public.

It is indeed lamentable that our professors are those—in too many instances—who know nothing of country practice, in fact, medical practice, city or town, mere book worms, each believing that his own subject will make the finished doctor, but as a practitioner of medicine such professor would be starved if engaged in practice. As a rule it takes a young M.D. some five

years, if not longer, to learn this simple fact that as regards therapeutics he is very ignorant, and is already in the clutches of the ready-made drugs company, and an unpaid vendor, and unsatisfied prescriber, a poor results obtained of drugs, and whose purchase keeps his pocket wallet very much wrinkled. He soon learns, if not too bigoted, that the ordinary druggist, next door, knows more of drugs than he, and can give him some very useful primary lessons—and even post-graduate instructions for his financial and professional interest—and the best of all for the benefit of the sufferer. Yes, it becomes young and old in practice not to become theorizers, medical anatomizers, day-dreamers, or visionaries in therapeutics, but possessors of all such knowledge that the Pharmacy College may give us ground work for the Mat. Med. and Therapeutics of the medical course. Although “God knows we’re not the thing we should be, nor are we even the thing we could be,” yet, we are struggling for the light and must confess “the years teach much which the days never knew,” and constant and personal study of the masters, even if fools deride. We must as learned men and as philosophers investigate, weigh and study and not forget our duty to our profession in the maintenance of its honor. And if you are not making it your vocation, but an avocation, it would be better for your respectability, as well as that of medicine and your fellow practitioners and your community, that you disgrace us no longer. Better it would be if you, by self study, could realize that you are a stumbling block and in the way—as an obstruction to the honest, struggling, studious brother who is in love with our profession, and has no side studies or supports detracting him from his labors.

Brother, when recently you carelessly or carefully read the pamphlet entitled, “Antipyrine, Acetanilide and Phenacetin,” by Uriel S. Boone, Ph.G., M.D., and which, no doubt, is on your desk, what were or are your conclusions in regard to the substance of the booklet? As these pamphlets evidently were sent to all medical men, and no doubt dentists, and even druggists in the U. S. and Canada, it looks as if Boone, by the pamphlet, is doing what appears dirty or unclean work for some chemical company in attempting to preserve patent compounds and to eulogize their actions, or was he—Boone—down at the heel, and for a mess of pottage, so far run down as to associate his name as the author or compiler of such literature? I again must state it is a dirty bird that befouls its own nest, and that none of the said dirt should remain under my humble roof, and where are my gods of medicine. I returned the—to me—profane

literature, and if you, yes, if all of us honest men, would do this we would free our desks and walls and our dispensaries from many decidedly obnoxious advertisements of the detractors of our good names.

We, as medical men, lead, too frequently, lives which prevent us from that fraternal interchange of opinions so essential to our professional advantages, and jealousy and over-estimation of self, associated with careless and indifferent reading, both tend to dwarf the intellect and usefulness of many good men. Yet, he is loyal to the profession, and if thoroughly awakened and encouraged he would soon learn that others, likened unto himself, are and have been in slumber, while our temples are and have been ruthlessly defamed by fakirism, and whereas he should be considered .

“The pillar of the nation’s hope,
The centre of the world’s desire.”

Such an honor is being seized for and by others not of our ranks.

Hippocrates says: “The physician is a philosopher and is God like,”

(IETROS PHILOSOPHOS KAI ISOTHEOS.)

and as such he should consider himself, and would undeniably be if he became more frequently associated with his fellow practitioners and studied their aspirations and experiences in practice, thus would he become no longer an “easy mark” among men; a better citizen—certainly a better doctor—even considered as

“*Homo fervidus et diligens ad omnia paratur,*”

and equally prepared to denounce the evils threatening our profession, and to arouse and encourage interest in the establishment of Dominion Medical Registration, our first and most patriotic desire; if “physicians are the natural attorneys of the poor, and that all social problems shall be largely worked out by them,” as Virchow says, it is demanded that every man among us should be fervid and diligent and well prepared for his labors in these interests. God said, “Let there be light, grim darkness felt his might and fled away.”

“Sweet is the usufruct of versatility.”

Selected Articles.

REGARDING SERA.

In the *Journal of the American Medical Association* for 22nd January there appeared a series of articles on the important subject of sera. Synopses of these papers are here given:

FEDERAL CONTROL OF SERUMS, VACCINES, ETC.

The law passed by Congress regulating the interstate trade in therapeutic serums, vaccines, etc., passed seven years ago, is explained and its working described by M. J. Rosenau, Washington, D.C. It provides for a complete system of governmental supervision over the establishments producing vaccines, viruses, serums, toxins, antitoxins, and analogous products. This oversight consists in inspections, licenses and methods of control or testing in the governmental hygienic laboratory. The law requires the proper labeling of the product with its correct name, with the name, license number and address of the manufacturer, and the date beyond which the article cannot be expected to be effective. It also provides penalties of fine or imprisonment and revocation of license for violation of its provisions. This supervision only applies, it must be understood, to interstate traffic in these articles. Before the law was passed it was found that irresponsible persons were making and marketing biologic products without sufficient care or knowledge to insure safety and reliability. Four of these firms were at once refused licenses and went out of business and the applications of others since have been refused for the same reasons. Most of the remainder have been required to modify their establishments or to improve their methods to bring them up to the government standards. Since the law was adopted there has been great improvement in the potency and safety of the products and it has been enforced without fear or favor. In general, the manufacturers have reached a high state of efficiency. The inspections are made at least once a year and oftener when necessary and include a very searching inquiry into the methods, the personelle, and the efficiency of the equipment. Foreign establishments have to undergo the same inspection before their products are admitted for sale into the United States. The license is issued by the Secretary of the Treasury for the manufacture of a specific product. General licenses, authorizing the manufacture of more than one biologic product, are not permitted. The government does not guarantee the efficacy of the product. Some serums of as yet unproved efficacy are given

licenses, and it is the province of the medical profession to determine their value. Samples purchased in the open market and those obtained directly from the manufacturer are constantly being examined in the Hygienic Laboratory at Washington, and if any are found questionable the manufacturer is required by the Surgeon-General of the Public Health and Marine-Hospital Service to withdraw it from the market. During the past year fifteen establishments were reinspected and relicensed and four additional ones licensed. Certain states and municipalities have found it convenient to manufacture their own products, but the general government has not gone further than to exercise a legal surveillance.

VACCINE VIRUS.

M. J. Rosenau, Washington, D.C., describes the modern method of producing vaccine virus. The material is usually taken from the vesicles when fully developed, which may be somewhere between the fifth and eighth day after the animal has been vaccinated. It should be taken only from typical unbroken vesicles, and is usually obtained by scraping with a curette. The vaccine pulp thus obtained may be purified with glycerine or other substances. Glycerine is best and is mixed with the pulp in the proportion of from 40 to 50 per cent. This acts as a preservative and antiseptic for the ordinary bacteria. It is impossible to exclude some harmless bacteria from the virus, strong antiseptic measures being impracticable, we must depend on cleanliness and asepsis in every stage of the production. The old-fashioned dry points are more liable to be contaminated, and the new federal regulation prohibits interstate traffic with them. Manufacturers have made an imitation of these dry points, which furnishes a very convenient method of vaccinating, by putting a drop of glycerinated virus on ivory or glass points hermetically sealed in paraffin or glass. These are safe and satisfactory. All vaccine virus is tested according to modern methods for virulent germs, and these tests include animal inoculations. The tests must be satisfactory before the virus is placed on the market. Special tests are made to determine the absence of foot-and-mouth disease and tetanus spores. All establishments manufacturing vaccine virus for the interstate traffic must be under government supervision. Rosenau makes a plea for the admission of vaccine virus into the Pharmacopeia. It is the oldest and best specific preventive known and a drug in the broadest sense of that term. One advantage would be in giving it an official and legal name to avoid the confusion liable to exist with other substances called vaccines used in therapeutics. Other substances such as diphtheritic serum have been admitted into the Pharmacopeia and

vaccine virus is recognized in the Belgian and Swiss pharmacopeias.

DIPHThERITIC ANTITOXINS.

W. H. Park, New York, describes the process of eliminating portions of the non-antitoxin serum substances of the horse serum used for diphtheritic antitoxin, and says that there are now two globulin preparations thus prepared on the American market. In answer to the question as to whether they have the same curative effects as the whole serum, he says that he has carefully watched the results following the injection of the whole serum and of the Gibson and Banzhalf modification. The rashes and after-effects are undoubtedly much less after the Gibson injections than after those of the whole serum, and somewhat less after the Banzhalf modification than after that of Gibson. Curiously enough, certain types of rashes are eliminated. The urticarial reactions still frequently follow. Certain French and Austrian investigators have asserted that the curative value of diphtheritic serum was only partly in the antitoxin and even that the antitoxin was the least important part. Their results would make it seem that the amount of serum rather than of the antitoxin units was effective. These assertions were mainly based on certain animal experiments which have been repeated by the author in Frankfurt and later under Ehrlich's direction. The serums used in Vienna were fortunately obtained by Ehrlich, and he was surprised to find that they had been very inaccurately tested. The author's results were exactly the reverse of those of the Austrian investigators, and strengthen the conclusion that the antitoxin is practically the only curative element in the serum. This applies also probably to tetanus antitoxins. So far as animal tests can be depended on, Park is positive that the globulin preparation contains all the curative substances of the whole diphtheritic serum and that this is in the antitoxic element.

TETANUS ANTITOXIN.

J. F. Anderson, Washington, D.C., describes antitetanic serum as that of certain animals, usually horses, immunized to the toxins of the tetanus bacillus. It is marketed in both the liquid and the dry forms. Some manufacturers make also an antitetanus globulin. All tetanus antitoxin sold in interstate commerce in the United States must conform to the official standard adopted by the Public Health and Marine-Hospital Service. The immunity unit for measuring the strength of the antitoxin is ten times the least quantity of antitetanic serum necessary to save the life of a 300-gram guinea pig for 96 hours against the

official test dose of a standard toxin furnished by the United States Public Health and Marine-Hospital Service. This unit recommends itself for its simplicity and is superior to the three European units now being used, which are admitted to be not entirely satisfactory. There is no present standard for veterinary use. Anderson gives a table showing the variations that existed in the unit strength of tetanus antitoxins before the promulgation of the American standard. The antitoxin is used both as a prophylactic and curative agent in tetanus. Used as a prophylactic, the dose is 1,500 units; as a curative, it should be given in doses of 3,000 to 20,000 units, repeated during the course of the illness. The dried and powdered serum has been used as dusting powder for wounds. The liquid serum is marketed either in syringes ready for use or in glass vials. Each syringe of tetanus antitoxin made by the American producers contains from 1,500 to 5,000 units; the unit value per cubic centimeter varying from 150 to 500 or 600. The affinity of the nerves for the toxin and its subsequent binding by them explains why the antitoxin is often of so little value after the symptoms have developed. It can, however, neutralize any new toxin that may be formed in cases where the focus has not been removed, and therefore should be always used in tetanus. Tetanus antitoxin is now recognized in the Belgian, French, and Swiss pharmacopeias. It should also be admitted to the American pharmacopeia, as its value as a prophylactic alone entitles it to admission. Anderson sums up the benefits obtained by the federal government control of the therapeutic serum as follows: "1. The physician can be assured that every package of tetanus antitoxin now contains at least the number of units claimed. 2. All serums are now examined for, and are required to be free from, bacterial or toxic contamination. 3. The amount of preservative contained in the serums is not excessive. 4. There has been a progressive increase in the potency of tetanus antitoxin without a corresponding increase in cost. 5. A uniform standard having been established, definite amounts of tetanus antitoxin can be used so that data will gradually be collected as to the amount of serum necessary to be used for immunizing and curative purpose."

SERUMS AND VACCINES.

L. Hektoen, G. H. Weaver and R. Tunnicliff, Chicago, give a brief preliminary report of the results of their study of the various antistreptococcus and antipneumococcus serums and of streptococcus, staphylococcus and pneumococcus vaccines found on the market. The antigenic properties of the so-called vaccines were tested by injections on rabbits with subsequent opsonin de-

terminations. Distinct antigenic properties were possessed by all the streptococcus and staphylococcus vaccines tested. The pneumococcus vaccines were inert in rabbits, so far as the opsonic examinations are concerned. Streptococcus opsonins were not found in any of the serums tested and activation by fresh serums was not accomplished to any extent. Attempt to obtain protective curative effects by antistreptococcus serums in rabbits and guinea-pigs and in a more limited scale in mice, failed. The serums seemed often to reduce resistance and to hasten death. In the antipneumococcus serums it was impossible to demonstrate antibodies for pneumococci. The authors believe that any claims for usefulness of antistreptococcus and antipneumococcus serums rest on impressions from results of clinical cases in man, and have in most cases no foundation in experimental tests whatever.

ANTIRABIC VIRUS.

A. M. Stimson, Washington, D.C., describes the method of preparing and using the antirabic virus according to the Pasteur method. According to this method, the spinal cord of a hydrophobic rabbit is dried for a time over caustic potash at a temperature of 23 C., which causes it gradually to lose its virulence. In the treatment, persons who have been bitten by rabid animals are first inoculated with a cord which has lost its virulence, and on successive days thereafter with virus from cords that have greater and greater potency. The virus therefore consists of the spinal cord material of the rabbit plus the micro-organism of rabies and its products, artificially modified as to its pathogenic properties. It is administered subcutaneously in emulsion and the immunity induced is of the active type, the patient producing in his own body the antibodies, which are demonstrable in the blood. It has been shown that this virus, like that of smallpox, can be preserved at least three weeks in neutral glycerine or by the addition of antiseptics, which enables it to be sent where it is needed. The treatment is purely prophylactic and has no influence after the disease has developed. The treatment fails in cases in which the incubation period is too short or in some rare cases in which the patient seems unable to develop the antibodies. The treatment usually takes three weeks with daily injections, and is available at about twenty institutions in the country. The virus can also be supplied to the health officers with laboratory facilities by the United States Public Health and Marine Service.

VACCINE THERAPY.

The general principles of vaccine therapy are explained by M. W. Richardson, Boston, who also describes its special appli-

cation in typhoid and other disorders. It is important, he says, to bear in mind, first, the fundamental distinction between passive and active immunity. In the use of a passive immunity the aid to the patient comes from without through an intermediary and the protection given is short, though its immediate power may be great. Diphtheria is the one disease in which passive immunity has proved its worth most emphatically, though almost as remarkable results have been obtained by it in cerebrospinal meningitis and more or less success in dysentery, cholera, typhoid fever, tetanus, snake poisoning, etc. In the use of vaccines, however, we aim to produce an active immunity. Already manufactured immune substances are not used, but we endeavor to stimulate the patient's organism by introducing into it more morbid material so that it may be manufacturing an increased amount of protective bodies to inhibit the growth of the invading germs. Success in this presupposes that the patient is not already overwhelmed with poison and can respond to the added stimulation. To bring about the desired bacterial destruction it must not be made too rapid or destructive so as to aid instead of inhibit the disease process. By bacterial vaccine is generally meant a culture of the special organism sterilized by heat or otherwise and suspended in known proportions of normal salt solution. Living organisms attenuated in number or virulence have been used in a few cases. Theoretically, this would seem to be most effective, but manifestly it would be attended with some serious dangers. We should keep in mind, however, the greater efficiency of living organisms in sterilizing the germs so as to change their characteristics as little as possible. Strong, in the Philippines, found that by using plague bacilli of attenuated virulence he could produce a much stronger immunity than is ever produced by dead bacilli, and similar results have been obtained in other diseases by other investigators. As a general rule, it is better to use autogenous vaccines, and if good results are not obtained with stock vaccines resources should be had to the autogenous kind. Definite rules as to dosage cannot be given, but it is advisable to start with what is below the usual dose and gradually increase. The interval between doses will also vary in different cases. Generally speaking, it is well to allow two or three days between the inoculations. The good results with typhoid vaccines in the British army and its use among United States soldiers are noted. The literature of the subject is gone over and the author gives his own experience with 28 cases of typhoid thus treated. The results of the treatment were not so striking, but the effect of the inoculation

seemed to be favorable as regards relapses, and he has little doubt of its value as regards this particular feature of the disease. The use of vaccines of *Micrococcus neoformans*, specially recommended by Wright in malignant disease, is mentioned. The Doyen antiserum obtained by the inoculation of animals with this organism is, Richardson says, without utility. There can be little doubt, he claims, that infection from the urinary tract due to the colon bacillus is favorably affected by vaccine treatment. The subjective improvement is often striking, and pain and frequency of micturition are quickly relieved. The character of the urine, however, changes but slowly, and the complete elimination of the bacteria is rare. Mention is also made of inoculation by Wright and Reed and by Turton, for gall-bladder fistula after operation and with colon bacillus in appendicitis.

GONOCOCCUS SERUM AND BACTERIN.

E. A. Thomas, Philadelphia, says that there can be no doubt as to the value of one or both of these agents in the treatment of gonorrhea and its sequels. While he still makes it a practice to determine the opsonic index in the treatment, he is becoming more and more convinced that it is not necessary, and he is therefore governed almost entirely by the clinical symptoms. He emphasizes the necessity of progression in doses, beginning with the minimum and steadily increasing until tolerance is established. Repeated small doses at long regular intervals and too frequent inoculations of too large doses may both cause harm by inducing hypersusceptibility. The best results, he thinks, are obtained by the use of autogenous vaccines, and stock preparations should only be employed when the others are impracticable. When he has used stock vaccines he has used those standardized in the William Pepper Laboratory of Medicine at the University of Pennsylvania. While the bacterins may retain their potency for a considerable period, his experience has shown the best results when they were used fresh and prepared every two to four weeks. He has never seen the slightest good results from pyocyanus bacterins and would discourage their manufacture.

TUBERCULIN.

E. R. Baldwin, Saranac Lake, N.Y., says that tuberculin represents the toxin of the tubercle bacillus and is the diametric opposite of an antitoxin. It depends for its diagnostic value on a special sensitiveness acquired by the tissues after a tuberculous infection and the clinical value of a tuberculin reaction is generally proportionate to the smallness of the dose and the quick-

ness and degree of the response. The more recent the infection and the more extensive the disease, the more delicate is the reaction, unless the disease is rapidly progressing or there is grave constitutional weakness. In such cases tuberculin serves no useful purpose. The reaction occurs with increased frequency as age advances and can be obtained in a large percentage of apparently healthy adults. Repetition of the same or increased dose is capable of arousing a latent sensitiveness from a former or healed disease, hence this method, especially when subcutaneously employed, is mainly useful in excluding active tuberculosis, and the interpretation of positive results must be made with care. They do not necessarily establish the diagnosis of an existing disease, which must be made in other ways. He describes the different forms of tests, recommending the cutaneous test of von Pirquet as harmless and most suitable for general use. Other tests may be needed in adults, but this is suitable as a preliminary in all cases. The subcutaneous test is the last resource and the most searching in tuberculin diagnosis. At present it may be regarded as necessary in most cases. Its dangers have been over-estimated, but it is potent for harm if carelessly used. It should never be employed when a satisfactory diagnosis can be made otherwise, when a fever of 99.5 F. or over is present, or when the patient has a rapid pulse, gives a history of hemorrhage or has already extensive signs in the chest. It should never be used in suspected Addison's disease. The tuberculin should be fresh and the dosage accurate, and if there is the least reaction the subsequent dose should not be increased. The interpretation of the results in tuberculin diagnosis must take into account the size of the dose required to produce the reaction, the promptness with which it develops and the local and general reactions accompanying it. The therapeutic use of tuberculin may be for the following objects: to diminish the sensitiveness to the toxin and to create intermittent local reactions and thus stimulate the disease focus to heal or be absorbed. Baldwin doubts the production of any recognizable immunity, any specific resistance obtained is gradually lost after stopping the treatment. Only patients in a comparatively quiescent stage of the disease are likely to be benefited, and progressive tuberculosis of any form is a contraindication. Focal reactions can be best observed and applied with safety when the focus is localized in the skin, bones, joints, etc., and the lungs are not involved. For therapeutic use, the choice of tuberculin lies chiefly between the solutions and emulsions or vaccines. In general, the dosage is more controllable with solutions, and reactions are less frequent from emul-

sions, though, owing to their uncertain absorption, unexpected reactions may occur if the dose is much increased. The dosage is at present empirical, each individual case must be an experiment, and until some standards are established the solutions are the safest. Careful clinical oversight is the most satisfactory guide; opsonic determinations, while useful in the hands of a few laboratory workers, are impracticable for the general practitioner. The subcutaneous method is the only satisfactory one for the therapeutic administration of tuberculin. Inunctions have a possible field in the treatment of skin tuberculosis, otherwise they are impracticable. The emulsions have experimentally some immunizing power against the disease in animals, but the amounts which can be given with safety in man are too small to produce this effect. The details of the technique of tuberculin injection vary with the preparation used and the experience of different observers. They are, therefore, not gone into by the author, whose purpose is merely to state the general principles which should guide and safeguard the use of tuberculin.

INOPERABLE SARCOMA.

L. Loeb, Philadelphia, says of the treatment of inoperable sarcoma by the streptococcus and prodigiosus toxins, that it is a vaccine treatment and differs from certain other vaccines by not being a specific remedy. These two toxins have no etiologic relation whatever to sarcoma, for the cure of which they are employed. The basis of the method of treatment is in this case an empirical one; it was noticed that an attack of erysipelas in persons afflicted with cancer, in a number of cases led to a retrogression of the growth and even to a cure. Certain acute infectious diseases, however, may also cause a retrogression of cancer. Fehleisen, after his discovery of a streptococcus as the cause of erysipelas, made some inoculation experiments in cancer patients with some beneficial results, and other surgeons likewise reported cures. The living bacteria were employed, however, and sometimes proved dangerous. It was a step in advance, therefore, when Spronck recommended the use of the toxins instead of the living germs, and W. B. Coley only a year afterward began a systematic study of their use in the treatment of sarcoma. Since that time he has persistently continued in this line of work and has improved it by adding the toxins of *B. prodigiosus* to the streptococcus toxins. Later it was found that the toxins did not have to be derived necessarily from the germs of erysipelas, and it is even likely that toxins or other bacteria may serve the same purpose. The toxins are injected in gradually increasing doses in a part of the body distant from the tumor, and later, if pos-

sible, into the tumor itself. Dr. Coley gives the following data of the treatment in sarcoma: "In 430 cases treated, the tumor disappeared under the influence of the toxins in approximately 11 per cent. of the cases; 6.5 per cent. of the patients treated have remained without recurrence over three years after the cessation of treatment. In 3 out of these 430 cases death followed, probably as a direct or indirect result of the treatment. According to Dr. Coley, in 13 cases of sarcoma of long bones, observed partly by himself and partly by other surgeons, the use of the toxins has rendered amputation of the limb unnecessary; in other cases, however, the toxin treatment was without effect. In a series of 22 cases in which the toxins were used after primary operation, 4 patients are now well after periods of from 3 to 8 years, and 9 after periods of from 1 to 3 years; in 5 cases recurrence took place in spite of the toxin treatment; the remaining patients are still under treatment or the cases are very recent." Loeb has collected the statistics of the experience of a number of prominent surgeons and concludes that the treatment of inoperable sarcoma by this method leads to a cure in approximately from 4 to 9 per cent. of cases, and some results obtained suggest that it may be useful as a postoperative procedure in diminishing the number of recurrences, and that in another certain number it might limit the need for amputation of the limb in cases of sarcoma of the long bones. The manner in which it acts cannot be definitely stated, but it is probable that the toxins and their reactions on the local and general syndrone often have an unfavorable effect on the life and growth of the sarcoma cells.

ANTIVENINS.

H. Noguchi, New York, gives the facts of the present medical status of the antivenins. There are three fatal constituents of snake venoms, the neurotoxins, hemorrhagins, and fibrin ferments. In the colubrine snakes the neurotoxins are the most important, as are the hemorrhagins in the viperine snakes. Fibrin ferments are present in both classes, varying with the species. The Australian snake venoms contain all three in pretty equal proportions; the venom of marine snakes contains only the neurotoxins; the Indian and African colubrine snake venoms contain chiefly the neurotoxins with a negligible amount of hemorrhagins. The venom of the pit vipers of America and Asia contains chiefly hemorrhagins, with secondary amounts of neurotoxins and fibrin ferments. The true vipers owe their poisonousness to the hemorrhagins and sometimes to powerful fibrin ferments in their venoms. Death from snake venom is due to various causes according to the predominating element. The

death from the neurotoxins is due to paralysis of the respiratory centres. The fatal issue from the viperine snake bites of India and Australia is due to rapid intravascular thrombosis or secondary poisoning or infection causing marasmus. In the crocodile or rattlesnake bite, death is caused by occasional hemorrhages in vital organs or setting up of cachexia or septicemia. In excessive absorption death may result also from the neurotoxins. The local effect of the rattlesnake bite is very important. The minimum fatal doses of all venoms can be accurately determined by animal tests. It is influenced, however, by the mode of introduction into the body. With the neurotoxins this makes little difference, but the minimum lethal dose of fibrin ferment containing venoms is very much smaller when injected into the circulation than when subcutaneously, and this is also true of the hemorrhagin containing venoms. Hemolytic principles of venom are not important as regards fatality. Each snake has its own particular venom acting in its own way. The neurotoxins of the cobra are different from those of the *Bungarus*, and the hemorrhagins of the rattlesnake are different from those of the copperhead. The fibrin ferment of the daboia venom is entirely different from that of other snakes. This fact is extremely important in employing antivenins. There are several different kinds of antivenins produced, each for a different snake, though two of them, Calmette's and McFarland's, are made up to be polyvalent, though their action in that way is a feeble one. The standardization of these antivenins is different according to the different investigators, and their methods are briefly described. The therapeutic dosage is large, but in practice there are more favorable conditions sometimes which prevent snakes from injecting their maximum amount. The crotalus bite, for example, according to Mitchell, does not very often cause death, and that of the cobra or any other snake may be so little above the fatal dose that a few vials of antivenin may neutralize it. In rattlesnake poisoning, death is not so immediate, and we may expect much benefit from its antidote. All antivenins should be administered by injections into the veins or muscular tissues, and in crotalus poisoning it is advisable to inject the antivenin both around the wound and intravenously. The favorable effect of a ligature in case of the daboia bite is noticed. The venom causes a quick intravenous thrombosis and prevents the absorption of the rest of the venom into the general circulation and gives a favorable opportunity for the use of the remedy. We must endeavor to get much stronger preparations of antivenins than hitherto. Their utility is naturally increased when used promptly. Only the specific antivenin for the species should be used.—*Canada Lancet*.

THE WASSERMANN REACTION—ITS CLINICAL VALUE.*

BY DAVID EDWARD HOAG, M.D., NEW YORK.

Instructor in Neurology, New York Polyclinic Medical School; Assistant Attending
Physician, Department of Neurology, University and Bellevue Hospital
Medical College.

It is now nearly twenty years since pathologists began to realize the value of the blood serum as an aid to diagnosis. In 1895 H. E. Durham and his assistant Greenbaum, while working in Gruber's laboratory in Vienna, discovered that immune serum could agglutinate bacteria. Positive results were obtained in several cases. A few months before Greenbaum had published his results, Widal, in Paris, applied the test, and wrote a succession of papers describing the technique and was proclaimed the discoverer of the reaction bearing his name, he being the first actually to apply the reaction to the diagnosis of typhoid fever. It was prophesied at that time that serum diagnosis would in the future be applied to many other diseases besides the enterica. Of the more recent advances in the application of serum diagnosis to the detection of infectious processes being at work, none promises to be of more importance than the serum diagnosis of syphilis.

Statistics show that next to tuberculosis, syphilis is the most important cause of death in man. In 1906 Wassermann, or, more properly speaking, Wassermann, Neisser, and Bruck, first described a method of diagnosis of syphilis by means of the blood serum. This reaction occurred between the serum of syphilitics and a watery extract of syphilitic fetal liver. This fetal liver produces a reaction of fixation in the presence of syphilitic serum, but produces no such reaction with the serum of normal individuals or those suffering from other diseases. In order properly to understand the Wassermann reaction, it is necessary to become familiar with the reaction of fixation, or what is known as the Bordet-Gengou phenomenon. Also we should understand the principle of hemolysis. Bordet and Gengou in 1901, five years previous to the description of the Wassermann reaction, found that when bacterial emulsions were injected into animals they were rendered immune to the particular bacteria used. Bacterial emulsions were called antigens. Animals injected with these antigens developed certain defensive bodies known as anti-bodies in their serum, in the process

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of becoming immune. Wassermann, in his modifications of these phenomena, substituted bacterial extracts instead of bacterial emulsions. Hemolysis is the power possessed by the serum of one species of animal to dissolve corpuscles of another species of animal. Hemolysis shows an absence of antibody in the serum of the patient, while absence of hemolysis shows the presence of specific substances, and therefore the presence of specific infection.

Although it is not my desire to inflict upon the members of this society burdensome detail of technique, much of which is of value only to the pathologist or laboratory worker, still I deem it important for the benefit of those gentlemen for whom this society is presumed to be instituted, as well as for those members of the society who are not familiar with Wassermann's reaction, to review briefly its technique. We must keep in mind certain terms: antigen=bacteria, antibody=result of bacteria, complement present in all normal blood serum, its office being to complete the action of what pathologists know as the amboceptor, so-called because it has an affinity on the one end for antigen, and on the other end for complement.

I will now give the technique employed by Swift, of the Carnegie Laboratory, to whose courtesy and ability I am very much indebted in my experiences along this line. Various materials used are: (1) Suspected serum obtained by venous puncture or from the finger or ear. The blood is allowed to clot, and the clear serum is removed, then heated to 56° C. to destroy the complement. (2) Complement of guinea pig serum. (3) Antigen, alcoholic extract of fetal syphilitic liver. (4) Red blood cells of a sheep or other animal, freed from complement by careful washing with salt solution. (5) Hemolysin, consisting of blood of the rabbit, the animal having been injected three or four times with the washed red blood cells of the sheep.

Two tubes with following contents are prepared: Tube 1, antigen, extract of liver of syphilitic fetus, plus serum to be tested, plus complement of guinea pig serum; tube 2, red blood cells of sheep, plus hemolysin. Contents of tube 1 are incubated for one hour, then added to tube 2, and then put in the ice chest over night and the results are read in the morning. If the serum from tube 1 had come from a syphilitic individual its relation to the antigen would be a specific one, and complement would be absorbed thereby. So that when the contents of tubes 1 and 2 were mixed, no hemolysis would occur. If the serum was not from a syphilitic individual the complement would not be absorbed, but would remain active to cause hemolysis in tube 2.

Hemolysis as observed in the test tube is a tingeing of the contents a transparent red color, the red blood corpuscles being disintegrated and hemoglobin liberated. If hemolysis has not occurred the red blood cells settle to the bottom of the tube. Numerous controls are necessary to show that the antigen or serum when used alone does not inhibit hemolysis. Also sera that have previously shown positive and negative results, respectively, must be introduced if the investigator is at all conscientious. It will thus be seen that the reaction is cumbersome and exceedingly complicated, and will probably always remain a laboratory test.

Noguchi, of the Rockefeller Institute, has described what promises to be a much simpler test, and in experienced hands possesses a good deal of reliability. It is a modification of the original Wassermann test in that the relative quantity of the different factors—complement, amboceptor, corpuscular emulsion, and antigen—are known and definite. Reagents are employed in liquid form, or the various reagents are preserved in stable form upon dried filter paper ready for use. The quantity of blood serum required is small. It has been hoped that this modification might prove of value as a bedside test.

Both of these methods are still in their infancy, and the technique not yet perfect, yet they have given to us a large amount of positive diagnostic data. Many investigators have adopted various modifications of Wassermann's method. Each has its advantages in different hands. It would seem that each observer should select some method and adhere to same.

* * * * *

In the latest report of Gay of the Harvard Medical School, which is one of the most recent contributions upon the subject, he has attempted to cover all the literature upon the subject for the past three years. This comprises over 220 articles. The observations cover some four or five thousand cases of syphilis. Since these reports came from a dozen different sources, with probably a variable technique, it is surprising to note the uniformity of opinion regarding the accuracy of this means of diagnosis.

Estimates were given of the diagnosis in the various types of syphilis in the following percentage: Primary syphilis, average estimate of positive percentage of reaction, 75; secondary syphilis without symptoms, 75; secondary syphilis, with symptoms, 90; secondary syphilis, average percentage, 71; general paralysis, average percentage, 81; tabes, average percentage, 67.

These observers likewise examined about six hundred controls

from normal individuals and from those suffering from other diseases, and with the exception of two diseases, scarlet fever and leprosy, all the cases gave a negative reaction. This shows that although the reaction as yet may not be absolutely specific, it is certainly of great diagnostic value.

Butler of Chicago, in his report, where he refers to finding the reaction positive in cases of scarlet fever, as well as in cases of leprosy, states that the inhibition of hemolysis was but slight in comparison with the complete inhibition in syphilis. In any event these two diseases would hardly come in conflict with syphilis in differential diagnosis. Swift points out that those cases in other diseases than syphilis where a positive reaction is obtained, speak most strongly for the use of syphilitic organs in the test.

Max Nonne of Hamburg was one of the first to make use of the reaction in neurological practice, but maintains that spinal fluid should also be tested for verification. Neurologists appreciate the importance of any method that will enable them to state positively whether a suspicion of syphilis is justifiable or not.

Prof. Pritchard very aptly stated in his paper on "Neurological Syphilis," read before the Tri-State Medical Society and printed in the *Polyclinical Journal*, Vol. xii, No. v, that a neurologist is one who knows all about syphilis and a little about neurology. That this maxim is undeniably true any neurologist will admit, and he will further admit that one of the first things that he is on the lookout for, while attempting diagnosis, is whether or not there is a syphilitic taint in his patient. This is often difficult to determine in the absence of symptoms. In fact, it is a practice among many neurologists, based upon results of experience, to treat a large number of diseases of the nervous system by anti-syphilitic remedies. In making a diagnosis it has to be determined by signs bearing a direct casual relationship to the nervous symptoms for which the patient is asking advice. The patient's remembrance of onset, duration, and course of the symptoms is often imperfect and vague. They often cannot or will not remember. Such facts as they can remember are often the same as in cases of so-called neurasthenia, and are misleading. In many cases, especially in women, there may be no history of syphilitic infection or no signs on the body, and yet the character of the disease may clearly point to the possibility of syphilitic origin. We may treat a patient by antisymphilitic remedies and he may recover and still we have no proof that the patient has had syphilis. A

person suffering from an affection of the nervous system, giving a positive Wassermann reaction, is much more liable to be suffering from syphilitic affection than one who is admittedly syphilitic, but has shown no signs, owing to treatment. Heretofore we have had no reliable diagnostic measure in cases where no symptoms are present and infection is denied. Cases under treatment show a positive reaction much less frequently than those untreated. While a positive reaction indicates that the individual has had syphilis, it does not necessarily prove that the particular lesion from which patient is suffering is syphilitic. It is a well-recognized observation in neurology that exactly those cases of syphilis that run a mild course and clear up early are often later the subjects of tabes or general paresis. The virus may have a selective action upon the cerebrospinal system. Wassermann was led to the hypothesis that long years of antibody production on the part of the nervous system lead to pathological degeneration of it. The presence of these antibodies in the serum of syphilitics may be irrespective of length of time that has elapsed since the first infection. Sachs believes that although much stress has been laid upon the value of the reaction in the diagnosis of tabes and general paresis, its principal value lies in its corroboration of our belief in the syphilitic origin of these two diseases. In cases presenting symptoms of either general paresis or tabes, but not marked, or marked by symptoms of so-called neurasthenia, the reaction might prove valuable. We must not infer, however, because a patient possesses neurasthenic symptoms, and it is proved that he has had syphilis, that he will develop general paresis. He may have been well treated early in the disease and his present symptoms be due to other causes. The reaction would throw much light on these obscure cases. Sachs believes that the reaction may prove of more value in the diagnosis of a number of other conditions, namely, between multiple sclerosis and cerebrospinal syphilis; central gliosis and specific myelitis; in cases of intracranial pressure, whether due to malignant neoplasm or to syphilitic gumma. In cases of epilepsy and hemiplegia, it would always be a matter of scientific interest, if not of therapeutic value, to know if the cause was specific. Butler's conclusions, based upon experience, are that the reaction is positive in 100 per cent. of cases of primary syphilis and in 95 per cent. of secondary syphilis. In tertiary and latent cases, parasyphilitic diseases, and visceral syphilis, he believes the reaction positive in 60 to 75 per cent. of cases. He believes with Swift that the reaction may be made a reliable guide as to treatment, since such reaction

is influenced by treatment. A positive reaction would indicate activity of the specific virus. A negative reaction is therefore not of necessity of negative value. The patient's destiny may thus be controlled. He may be protected from the serious ravages of late syphilis of internal organs, or possibly the parasymphilitic affections, by the institution of vigorous antisymphilitic treatment.

Although we have a valuable therapeutic aid, we have not had a satisfactory diagnostic measure. In skin lesions where syphilis is manifestly present it cannot have more than a confirmatory value, and the fact that the reaction is found positive so frequently in this condition renders its use in more obscure cases a fairly certain diagnostic sign. There are a number of irregular skin manifestations that cannot surely be diagnosed as syphilitic. Formerly the therapeutic test was applied when such condition presented itself. The Wassermann test might justify our suspicions, and proper treatment could be at once instituted, thus saving valuable time. If negative reactions were obtained, the saturation of the system with damaging drugs might be prevented. Butler again draws our attention to the difficulty of diagnosing visceral syphilis. If gummata exist they are often located so that they do not interfere with the function of any organ, and may be out of reach of the palpating hand. Syphilis of the liver often resembles in symptoms malignant growths of same, which are inoperable. There may be no history or evidence of past syphilis. Lesser, in his post-mortem studies of visceral syphilis, found thirty cases of liver gumma that had gone unrecognized clinically. Very many cases of gumma of the heart and lungs are never diagnosed. We thus have in the Wassermann reaction what would seem a valuable aid to the surgeon and internist, valuable especially in early diagnosis. Knowing the wide prevalence of syphilis as an etiological factor in a large number of visceral conditions, it should receive consideration and the blood be examined for reaction.

Castelli, after reviewing the subject at length, makes a plea for the recognition of the value of the reaction from a social standpoint. Unrecognized and untreated cases of syphilis creating degeneracy and insanity, it puts us in position to advise more scientifically upon the question of marriage. He believes that in addition to its value as a tremendous factor for benefiting our fellow-beings, it might become an important factor in dispensation of justice where we could recommend courts to leniency in those cases where previous syphilitic infection had produced a derangement of mental poise.

In drawing to a conclusion this rather chaotic arrangement of experiences and opinions, I realize that many important considerations relative to the reaction and its value may have been omitted, not by intent, but through lack of time and space. My own experience with the reaction has taught me that in the study and analysis of groups of cases submitted to the test some discrimination is necessary, as in the analysis of any symptom. In my opinion the clinical value is well established, but it is difficult sometimes to find a satisfactory scientific explanation. The controversy has already assumed voluminous proportions. The unwary reader is tempted to feel that the test itself must be a doubtful one, in view of the differences of opinion that exist as to the details of its explanation. The specificity of the test is the matter of paramount importance. The uniformly negative results found in controls and a large percentage of positive reactions in luetic, or even suspiciously luetic cases, tend to establish the reliability of the test. It is upon these two points that the reliability of any blood test depends.

If we will regard reaction as a symptom and measure it in the same light as other symptoms, we will appreciate its true value. Physicians should recognize in the Wassermann reaction a valuable addition to their armamentarium, become thoroughly conversant with its possibilities, and utilize it at every opportunity.—*Medical Record*.

THE CLINICAL VALUE OF CARBON DIOXIDE SNOW, WITH DEMONSTRATION OF THE NEW ICE COMPRESSION MOULD

BY WALTER IRWIN LEFEVRE, M.D., CLEVELAND.

Only within the past few years has carbon dioxide been utilized in the treatment of disease. Its use was popularized by an American physician—Dr. Pusey, of Chicago—and at present it is considered indispensable in the armamentarium of the dermatologist. Commercially, it has been used many years, but there also its field of usefulness has expanded until to-day its manufacture engages the attention of the largest chemical companies.

Medicinally, besides its uses in skin lesions, it is used in giving baths. These are of two kinds, the water and the air bath. In the air bath the patient is placed in an ordinary "sweat cabinet" and the gas is introduced at the bottom, a lighted candle near the top serving as a simple indicator to show when the cabinet is full. The gas being heavy fills from the bottom up; so when the candle is extinguished the cabinet is full. In the water tub bath two methods are employed. A simple and cheap way is to place a cup or so of acid sulphate of soda and soda bicarbonate in the bottom of the tub; fill the tub with water and the carbon dioxide will be evolved and will collect upon the surface of the body. The other way is to introduce the gas into the bottom of the tub from the ordinary storage tank. These baths are said to be very stimulating and are used for restoring "the vigor of youth."

In dermatology, carbon dioxide has proved very valuable in a number of diseases and conditions. It is easily handled, almost painless in its application and positive in its action. With it a degree of reaction can be obtained ranging from an erythema to necrosis, depending upon the pressure exerted and the length of contact. With the carbon dioxide ice a temperature of about 110° below zero is obtained, so that when the skin is touched with it there is at first a slight sting, but almost instantly the surface is frozen and hence anesthetized. Five to ten seconds is sufficient time to destroy a mole or vascular nevus. In a short time a blister forms if the skin is not broken, with more or less edema of the surrounding tissue, but unless the area treated is quite large the patient does not suffer much pain. It can be used upon any accessible part of the body.

Personally, I have found it useful in warts, moles, birth-marks (both vascular and hairy), tattoo marks, epithelioma, lupus, lupus erythematosus, lichen planus, and xanthoma palpebrarum. Others have reported good results also in keloid, keratosis, indurated eczema, chloasma, and powder stains. Its field of usefulness is growing and it has proved a valuable agent, especially in some of the conditions which have been intractable to other measures. Its chief advantage, though, over other destructive agents is in the cosmetic results obtained. It is even superior to electrolysis in this respect, and is not to be compared with caustics, escharotics or surgical means.

The compression ice mould which I use is a convenient, rapid and economical method of handling carbon dioxide. It consists of a triple-barrelled screw syringe; the two inner tubes are of brass, perforated with fine holes, and between the two is a layer of chamois skin. The other tube is of fibre; being a non-conductor, it does not become very cold. The syringe is screwed directly to the valve of the tank, and the plunger is set so as to hold as much snow as is desired. The rapid evaporation of the liquid carbon dioxide produces such an intense cold that the cylinder is soon filled with the snow. This is then compressed into ice, taken out of the mould and applied directly to the part. In the compression the temperature is reduced and the ice is hard and dry, so it can be fashioned into any shape with a pen-knife. A cone of the ice about one-half inch long will last about 15 minutes in the open air, and for about 60 minutes if wrapped in chamois skin.—*Cleveland Medical Journal*.

THE TREATMENT OF SYRINGOMYELIA BY RADIUM.

If there is a branch of medicine in which any novel method of treatment ought to be welcomed and generously tested it is that of neurology. The number of cases of a chronic nature with which the practising neurologist is confronted is so considerable that they constitute a reproach. He is powerless to arrest the insidious progress of myopathy or to check the nuclear degeneration of bulbar palsy. Syringomyelia is an excellent instance of a chronic nervous disease of which the chapter on treatment is as yet unwritten. Nevertheless, we owe to our French *confrères* an advance in the therapeutics of that malady that is deserving of serious consideration. Two years ago M. Beaujard and M. Lhermitte published an article on the radiotherapy of syringomyelia, in which they announced that exposure of a syringomyelic patient to the action of the X-rays had been followed by a recession of the symptoms. Similar results in one or two cases have been obtained by, among others, Professor Raymond. In the *Progrès Médical* of Dec. 18th, 1909, Mlle. Fabre and M. Paul Touchard, of the Salpêtrière, report a series of five cases of syringomyelia handled in an analogous fashion by exposure to radium, with surprising effect. As our readers may remember, the emanations of radium are known as alpha, beta and gamma rays, respectively, the penetrating power of which increases in this order. The alpha rays are arrested by the skin, whereas the beta rays penetrate deeper, and the gamma rays will pass through bone itself. For their purpose the investigators employed a flat tray, the surface of application of which was 6 centimetres square, containing $1\frac{1}{2}$ centigrammes of pure radium bromide, and a nickel screen, three-tenths of a millimetre thick, sufficient to allow only beta and gamma rays to filter through. The applications were made daily to the vertebral column, at various levels, alternately to the right and left of the spinous processes. At first the duration of the exposure was restricted to 10 minutes, but evidence of the innocuousness of the applications led to their being extended to as long as an hour and a half. The record is certainly an encouraging one. All five cases improved, three of them to a remarkable degree. All showed increased mobility of the limbs, with diminution of stiffness. One patient's hands had been quite helpless, in a *main-en-griffe* position, but after radium treatment she was able to flex, to extend, and to separate the fingers; a second was enabled to resume his work as a draughtsman after six months' disuse of

pencil and compasses. Another remarkable fact was the disappearance in one case of the trophic disturbances characteristic of Morvan's disease after exposure to the action of radium during several *séances*. The effect of the metal on the muscular atrophy so frequently noted in syringomyelia was less obvious, as it was also on the variable anesthetics and analgesias of the disease. The rapidity with which improvement set in is striking. After three or four exposures the "succulent hand" of one case had altered for the better very appreciably and muscular force had returned. Amelioration, in at least two cases, has continued and persisted long after the cessation of radium treatment. From the theoretical standpoint there is reason to suppose that the action of radium on the syringomyelic cord is analogous to its accepted action on neoplastic tissue. By some mechanism unknown to us the rays check the proliferating tendency of the cellular elements of new growths, and on this analogy it is perhaps only in developing cases of syringomyelia that they are likely to be of service.—*The Lancet*.

TREATMENT OF DYSPEPSIA.

BY JOGENDAR LAL CHANDRA, L.M.S.,

Late Professor of Anatomy, College of Physicians and Surgeons, Calcutta.

Dyspepsia in the truest sense of the term is not a disease; it is, like fever, a symptom of some latent disease; it arises from the disorder in the digestive system whether functional or organic. It is induced by imperfect mastication, bolting of meals, too much fluid with meals, hard mental or physical work immediately after eating, too cold or too hot food, food badly cooked, excess of tobacco smoking, etc. Greasy and fried foods cause dyspepsia because the gastric juice cannot penetrate the coating of fat.

Acute dyspepsia is caused by too large meals, errors in diet, excess of alcohol, etc. *Treatment*.—Assist vomiting by tickling the fauces; milk with *sodi citras* is the ideal food; the dyspepsia usually passes off in two or three days. During convalescence, give *Liq. Bismuth et pesin Co.* in drachm doses after meals.

Atonic dyspepsia is due to deficiency of the hydrochloric acid in the gastric juice. The food undergoes butyric acid fermentation.

The indications for treatment are (a) to remove dietetic errors, (b) to stimulate the secretory and motor powers of the stomach, by alkalis with nux vomica, carminative and bitters before meal. Sodi bicarb acts as a stimulant to the gastric juice, increasing the secretion of hydrochloric acid and thereby aids digestion, but not of pepsin; hence it is given immediately before meal in small doses.

The following are the best prescriptions for atonic dyspepsia:

Sodi bicarb.gr. 10

Sodi citrat.gr. 7

Inf. Cascarellaad. .oz. 1

M. ft. for a dose: Sig. Half an hour before each meal.

Writer's favorite formulæ are:—

Elix. Papaindr. 1

Taka—diastasdr. 1

Sp. Chloroformmin. 10

Essence Ment. pip.....min. 10

Aq. Ptychotisad. .oz. 1

M. ft. for a dose: Sig. One twice a day after meal.

Glycerini acidi pepsin.....dr. 1

Acid Hydrochloric dil.....min. 10

Tinct. Nucis Vomica.....min. 4

Tinct. Cardamom Co.min. 20

Aq. Caruiad. .oz. 1

M. ft. for a dose. Sig. One twice a day after meal.

Acid dyspepsia (Hyperchlorhydria) due to hypersecretion of hydrochloric acid in stomach; pepsin remains constant in amount. Treatment is mainly dietetic. Prof. Savill is of opinion that proteid diet relieves the condition, while the writer has learnt from experience that hyperchlorhydria is induced by constant proteid overfeeding.

Sodi. Bicarb. neutralizes any free acid present; therefore it is given two or three hours after food in large doses. Soda mint tabloid to be sucked an hour after meal.

The writer recommends:

Strontium Bromidedr. 3

Ext. Gulancha liq.....oz. 1½

Ext. Nucis Vomica liq.....min. 20

Ext. Cascara Sag. liq.....oz. 1

Dose, a teaspoonful with water twice a day after meal.

Atropin Sulph. gr. 1/100 tabloid. Duboisin hydrochlorate gr. 1/640 after meal. Hopogan (magnesium peroxide) relieves pain by neutralizing excess of acid, and it is antiseptic. It is a

white, tasteless powder, given in milk. Dose, 20-30 grains to be taken an hour after meal. In gouty diathesis with hyperchlorhydria and fermentation it acts miraculously.

Nervous dyspepsia depends upon the disordered condition of the nerves of the stomach. Ext. Sumbul liq. acts admirably in this form. Cocaine hydrochlor. gr. $\frac{1}{4}$ given three times a day in milk will cure the disease. Chloretone gr. 2 dissolved in water has cured a case under writer's treatment like a charm.

Fermentative dyspepsia is due to fermentation. The writer's well-tried prescriptions in this form are:

Sodi Sulpho-carbolat	gr. 3
Tinc. Nucis Vomica	min. 4
Tinc. Carminative	min. 10
Inf. Calumba	ad. oz. 1

M. ft. for a dose: Sig. One quarter of an hour before meal.

Benzo-naphthol	gr. 2
Taka diastas	gr. 2
Sodi Bicarb.	gr. 5
Pulv. Carb. Lig.	gr. 5

M. ft. for a pulv. Sig. To be given in wafer paper twice a day after meal.

In irritable dyspepsia arsenic in drop doses before or after meal acts well.

Liq. Arsenicalis	min. 3
Potas. Bicarb.	gr. 10
Inf. Calumba	ad. oz. 1

M. ft. for dose. Sig. One twice a day after meal. When pain is the urgent symptom, use the following:

Bismuth Salicylat	gr. 5
Pulv. Tragacanth Co.	q.s.
Acid Hydrocyanic Dil.	min. 1
Liq. Opii sedativus.	min. 4
Aq. Auranti floris	ad. oz. 1

M. ft. for a dose: Sig. One thrice a day. Heroin hydrochlor. gr. 1/12 tabloid once or twice a day.

In dyspepsia of liver origin, bryonia acts well.

In dyspepsia with oxaluria, nitro-muriatic acid with nux vomica and bitters is very efficacious.

For dyspepsia with uterine trouble, drop doses of laudanum with nux vomica and uterine sedatives are good.

For dyspepsia of scurvy, lime juice and pepsin, a drachm or two to be diluted with cold water twice a day after meal.

Hygienic treatment:—

Rest in the beginning; later systematic exercise, change of air, sea voyage or summer in mountain.

Abdominal *massage*, when skilfully done, strengthens the motor power of the stomach and aids peristalsis.

Lavage may be practised when other means fail. Physician should bear in mind the undermentioned important points, *viz*:

(a) Time taken by the patient at the meal.

(b) Quantity and quality of food the patient eats.

The writer recommends his dyspeptic patients to chew each morsel as many times as the number of teeth before swallowing. By this simple method he has cured several cases where there was objection for allopathic system of treatment.

Dietetic treatment:

Dietetic errors are the fruitful source of dyspepsia and gastritis; too frequent meals, habitual overfeeding, irregularity of the meals, will in time derange any stomach; deficiency of food and long restriction of food induce dyspepsia.

The writer recommends the following:

1. Raw papaya boiled in water.

2. Pine apple juice aids digestion.

3. Banana fruit as food.

5. Somatose.

6. Milk.

(a) Milk with *sodii citras*.

(b) Fermented milk.

(c) Peptonised milk.

(d) Cider whey. Add equal part of Devonshire cider to fresh milk; keep it till curd is formed; remove the soft curd. It is used in nervous and fermentative dyspepsia.

(e) White wine whey. Add three ounces of pure sherry to a pint of boiling milk, remove the curd. Used in obstinate dyspepsia.

No definite list of food can be prescribed. "One man's food is another man's poison." However, the following is an ideal menu of diet as prescribed by the writer in most obstinate cases of dyspepsia:

Early in the morning—6 oz. of warm water to be taken by sips; it prevents fermentation and washes out the stomach.

8 A.M.—Juice of "helancho" and raw milk each half a chattaek.

9.30 A.M.—Good cold shower bath.

10 A.M.—Rice "*dad khani*" or "*basmati*" to be boiled in cocoanut water on a slow fire; wash the warm rice in

water and serve. Boiled banana fruit and raw papaya; soup of "*gadhal*" herbs; fried "*mourala*" fish; soup of black fish "*koi*," "*magur*," "*singee*," milk and rice.

Drink little, or better no water during the meal.

When meal is over, lie on the left side for half an hour so that the food may lie long in the fundus of the stomach.

No mental or physical labor at least half an hour before or after the meal, to have the full benefit of more blood in the abdomen, which indirectly aids digestion.

11 A.M.—A glass of fresh cocoanut water; where it is not available, a glass of soda water is a good substitute.

2 P.M.—Milk, or better fermented milk or fresh curd.

4 P.M.—Fruit juices of papaya, pomegranate, oranges, grapes, etc.

7 P.M.—Barley water; *mung* soup, fish soup, milk.

Sweets forbidden except "*palm misry*" and "*cocoanut gure*." "*Balam*" rice causes acidity, therefore not allowed in dyspepsia.

9.30 P.M.—Patient should go to bed.—The P. M. in *The Anti-septic*, Madras, December, 1909.

THE TREATMENT OF LOCOMOTOR ATAXIA

BY GRAEME M. HAMMOND, M.D.

Recognizing the futility of anti-syphilitic treatment to materially benefit true cases of ataxia, it occurred to me several years ago that if we could maintain nutrition of the degenerated cells and maintain the nutrition for a definite length of time that possibly the degenerative process might be arrested or at least delayed. About eight years ago I began treating ataxia with gradually increasing doses of strychnia until doses of $\frac{1}{2}$ grain three times a day, or even more than this, were reached. During this time a great many cases have been treated, so that I am prepared now to state with some definiteness what this form of treatment has been able to accomplish. In no instance have I ever seen a case of locomotor ataxia cured, but I have seen pains disappear, and control regained over the bladder and bowels, and locomotion decidedly improved. In most all cases the

advance of the disease is checked, and a great deal of improvement follows. I have never seen the Argyll-Robertson pupil or the Romberg symptom disappear, nor the knee jerks ever come back, but these symptoms, when present, do not seriously interfere with the patient's life nor materially add to his discomfort; and if we have the means at our disposal of checking the growing ataxia, and even of improving that symptom, of stopping pain, and of giving better control of the bladder and bowels, we are able to do a great deal to alleviate the suffering of a class of patients whom we have not been able to materially benefit heretofore.

My method of administering this treatment is as follows: beginning with a dose of $1/30$ of a grain three times a day, at the end of a week I increase this dose to $1/20$ of a grain; and at the end of another week to a $1/16$. These doses are given in tablet form by the mouth. At this time I give, in addition to the tablet of $1/16$ of a grain, one drop of a solution containing one grain of strychnia to one ounce of water; next day two drops are given; next day three drops, and so on, each day increasing one drop until doses of thirty drops three times a day are reached. As thirty drops of this solution just equal a $1/16$ of a grain, I am able to discontinue the drops and to substitute for them another tablet containing a $1/16$ grain; thus the patient will then take two tablets each containing $1/16$ of a grain three times a day or $1/8$ of a grain at a dose. I maintain this dose for three months, then increase the dose with the solution the same as before until a dose of $3/16$ is reached. I maintain this dose for at least three months, and then gradually increase as before. In this way the increase in dosage is made so gradually that few patients appreciate any difference. Seldom do we find any improvement in the patient's condition until a dose of $1/4$ of a grain three times a day is reached, though the patient's general health improves long before this period. After a maximum dose of $1/2$ grain is reached it has been my custom to maintain this dose for about a year and then to gradually reduce it. I now have patients under observation who have not had any strychnia for over two years, and who show no signs at present of relapsing.—*The Post-Graduate*.

OPHTHALMOLOGY AND OTOTOLOGY.

IN CHARGE OF J. T. DUNCAN.

Treatment of some Eye Diseases by the General Practitioner.

In the *Virginia Semi-Monthly (Medical)* four diseases are spoken of by Wilkerson. He gives the diagnostic points of each:

I. Conjunctivitis.—Always a discharge; pupil always dilates freely; cocaine dilates pupil; sensation of burning, pricking and of foreign body; some photophobia.

II. Ulcer of Cornea.—Usually a discharge; great photophobia; the continuity of cornea has been broken at some point; there is usually a decidedly white, ulcerated spot. When there is any doubt as to whether the cornea is involved, this can be determined by instilling first a solution of cocaine, 2 per cent., followed in two to five minutes by an instillation of fluoresceine, 1:100 followed again by a drop of cocaine. If there is an ulcer this will stain it yellow, and it becomes very distinct.

III. Iritis.—Small, usually ragged, irregular pupil; discolored iris, deep-seated inflammation; pupil not dilatable with 2 per cent. solution of cocaine; pain in eye and temple, worse at night; little or no discharge; normal tension; some photophobia.

IV. Glaucoma.—Hard eye; great pain in eye and temple, sudden in onset; steamy cornea, slightly dilated pupil, but regular. Shallow anterior chamber.

Wilkerson then gives the following “dont’s” in ophthalmology:

1. Don’t treat an eye until you know what is wrong with it.
2. Don’t use a poultice of any kind on the eye. Poultices have done more damage than they have ever done good. They mask the symptoms and cause rapid ulceration and breaking down of tissues.
3. Don’t use atropine in the eyes of persons above the age of forty years, unless you are absolutely certain that you have a case of iritis.
4. Don’t use acetate of lead in ulcers of the cornea. You will get a lead deposit in the cornea.
5. Don’t use cocaine in ulcers of the cornea. It causes a degeneration of the epithelial membrane and invites ulceration.
6. Don’t treat your chronic headache and migranous patients

for years with pills, purgatives, and coal-tar preparations, but send them to a competent oculist and have them fitted with glasses.—*New Albany Med. Herald*.

On the Use of Mercury by the Ophthalmic Surgeon. In the *Therapeutic Gazette* is a most suggestive article on this subject by Burton Chance. Of course mercury in some form is always used in cases where any "specific disease" is suspected; but the plea of the author is that this form of treatment is most valuable in many cases where there is no suspicion of syphilis. The elder Hutchinson taught that mercury and the iodides are apparently specifics in maladies which are not syphilitic at all. . . . It is quite probable that the physiological operations of mercury manufacture a substance which may be regarded as an auto-antitoxin. Mercury therefore may be used to antagonize the effects of infection, and is in clinical experience a most valuable antidote. Again, mercury is an energetic diuretic through an increase in the renal metabolic activity; the vessels are flushed, and the epithelium is so affected that a more favorable passage for the retained excrementitious products is effected.

It has long been my habit when treating phlyctenular disease of the conjunctiva and cornea to prescribe fractional doses of calomel or of "gray powder," interrupting the course, however, by one of a mineral acid. I have had in mind that in these conditions there has been a blocking of the secretions. The mineral acid has had an astringent action on the glands which the calomel has stimulated into a greater activity. By the small doses, through the pouring out of an increase of the immunizing products, metabolism has been enhanced.

Likewise, in states of glaucoma I commonly employ calomel for a few days, succeeding it by small doses of the red iodide, each to be used in connection with saline beverages, believing that by increased alkalinity of the blood the endogenous anti-toxicity of the blood is increased through the destruction of waste products and the consequent enhancing of osmosis.

After speaking of the power of small doses of mercury over "chronic or local infections," he says that disturbance of the circulation in the uveal tissues, producing a sluggishness of action of the iris, cloudiness of the aqueous and vitreous, bogginess of the choroid and retina, with undue hyperemia of the optic disk, sometimes in persons who believe themselves to be in perfect health, can be entirely dispelled by a few doses of fractional amounts of calomel. And again, sometimes such an individual is delighted at a singular exaltation of spirits supervening on such a short course of the mild chloride, in spite of his former asseverations of good health.

It is seldom that ophthalmologists see very young infants with iritis or parenchymatous keratitis, or other diseases requiring mercurial treatment. After three years of age, however, the frequency of these diseases begins to be marked. In this group of cases we may employ the official ointment. In most young children I get satisfactory and prompt results by suspending the mercury in cod-liver oil and have it rubbed up in lanolin. The proportion must be varied to suit the case, but an average formula may be: Mercury, 3 parts; cod-liver oil, 5 parts; lanolin, 2 parts.

The effects of mercury upon iritis can be watched from day to day, and as the dangers arising from inflammation of this membrane are chiefly from the effects of the exudation of lymph, the value of mercury as an antiphlogistic is supreme. When promptly administered the damage caused by exudation into the pupil, or by attachment of the iris to the lens, may be averted through the antiplastic property of mercury. Here rapid action can be had by drachm quantities of the ointment rubbed thoroughly twice, even thrice, daily, increasing the absorption by energetic diaphoresis, by the hot-air bath or by prolonged hot bath.

The retina is commonly affected when the choroid is diseased, so the treatment designed for the one includes the other. In hemorrhagic retinitis, mercury is of signal usefulness, not only in hastening the absorption, but in preventing the organization of the exuded plasma. It appears, however, to have but little effect when organization of the effused material has already taken place. Syphilitic chorioretinitis, when observed early, is promptly affected.

In toxic amblyopias, mercury hastens the elimination of the poison. Ocular palsies, in syphilitic and parasymphilitic affections, are usually well influenced by mercury. In some cases they have shown improvement by the end of the third day. In such favorable cases, not only was one drachm used by inunction three times daily, but a prolonged hot bath every third night.

Without doubt mercury is of inestimable value in sympathetic ophthalmia. It is conceded that this dreadful condition is dependent upon the passage of toxins within the ophthalmic circle. We have not yet been able to define the nature of these toxins nor isolate with certainty exactly which bacteria give rise to them. Certain it is that mercury, through the instrumentality of the internal secretions, neutralizes and antidotes their virulent action. No other form of medication is as rapid nor as sure. Therefore it is imperative to use mercury immediately

in wounds of the ciliary zone, especially if the wound be a clear one, for suppurating wounds are usually less likely to be followed by sympathetic disease.

In the treatment of wounds of the eyes, mercury favors early union, hastens the absorption of plastic exudation, if it does not prevent it, and to a great extent prevents the systemic infection.

Angina Pectoris.

Allbutt in the *British Medical Journal* gives the following directions as to treatment:

Never bring on the pain; every renewal of it keeps up the sum of stimuli. If for this end absolute stillness in bed be required, then bed it must be, with the corresponding reduction of food. Thus, if at first the attacks are not abolished, they will be mitigated, and will gradually taper off. The subsequent imprisonment must be determined by the sagacity of the physician, guided by the sensations of an intelligent patient. At the same time all those measures, medicinal, dietetic, and other, which are known or supposed to reduce arterial pressures will be enforced. Sir Lauder Brunton's potent means, the nitrites, are indispensable.

To guard against vagus inhibition, atropine must be administered regularly. In very painful cases morphine may be needed also. An ice-bag applied cautiously and intermittently to the upper thoracic spine may prove helpful. The possibility of syphilis must be thoroughly discussed and tested by pathological and clinical methods; and if discovered, or even suspected, resolute treatment, chiefly by mercurial inunction and the iodides, must be prescribed. Empirical experience suggests that iodides in some dose should be administered in all kinds of disease. Specific remedies for any general morbid condition, as for acute rheumatism, gout, etc., will not be forgotten.

Of new remedies two have seemed in the author's experience to be efficacious, more especially in angina minor—namely, (a) the high-frequency current, and (b) the administration of the lactic acid bacillus by the method of Metchnikoff. Baths and massage cannot be prescribed in any urgent stage of the disease. Causes of eccentric irritation must be discovered and neutralized. The patient must be warned never to swallow quickly, nor to bolt large morsels. Diuretin and aspirin have their advocates. Chloroform is very dangerous in angina. In syncopie failure of the heart artificial respiration should be tried.—*Therapeutic Gazette*.

Editorials.

ANGLO-SAXON CONSOLIDATION.

One of the most interesting functions that this Continent has known for a long time was the Banquet of the University Club, held in Albany, N. Y., Saturday evening, March 19th. Among those present were the President of the United States and many of her leading citizens, the Governor-General of Canada and Minister of Finance Fielding. During the address of His Excellency Earl Grey, he said: "So far I have spoken in my capacity as Governor-General of Canada. May I now say one word at this university dinner as a university man talking to university men, as a Rhodes Trustee, and one of the Executors of Cecil Rhodes' will? May I be permitted to refer for one moment to the terms which rooted in the grave of Cecil Rhodes are destined one day to bear immortal fruit? What was Cecil Rhodes' great dream? What were the methods that prompted him to give to your 49 States a magnificent present of Oxford scholarships. They were prompted by the consciousness that we are projects of the same stock, that we are inheritors of common ideas, that we are the joint trustees of Christian truths. The hope that filled the great heart of Cecil Rhodes, that found imaginings, was that one day the English speaking people of the world—of your Republic and of all the free Democracies of the British Empire—would be joined together for worthy purposes in a great Anglo-Saxon consolidation, strong enough perhaps to stop unnecessary wars, and powerful and high-minded enough to lead the nations in the march of progress and reform. In this hope Cecil Rhodes founded his scholarships. He reverently prayed that they might one day prove an effective stepping stone to the attainment of that Anglo-Saxon consolidation which would appear to be the chief head of suffering humanity. Perhaps some day, through the munificence of an American benefactor, a further stepping stone may be established in a similar endowment of scholarships in one of your great American Universities for the most promising men that can be selected from the various parts of Great and Greater Britain, thus providing further

opportunities to the various units of the English speaking people all over the earth to acquire a better understanding of and a greater love for one another, and additional securities for the permanent peace of the world and the unchecked advancement of our highest hopes."

DR. SHEARD AS MEDICAL HEALTH OFFICER.

It is generally recognized by the citizens at large that the resignation of the positions of Medical Health Officer and Chief of the Street Cleaning Department, by Dr. Charles Sheard, is a calamity for the City of Toronto. It was certainly a grand thing for that city to have at the head of its Health Department a man of undoubted ability and virile independence. It was indeed remarkable that one such as he should have worked so indefatigably for Toronto for so many years.

Dr. Sheard received his medical education in Trinity Medical College, and graduated from Trinity University in 1878. During his student days, in addition to his high standing on the class list, he gave evidence of great ability as a public speaker. Immediately after graduating he was appointed a member of the teaching staff of Trinity Medical College, where he gained a high reputation as a teacher, especially in Physiology and Clinical Medicine. When amalgamation of Trinity and Toronto Universities took place he was appointed Professor of Preventive Medicine, which position he still holds.

Dr. Sheard became Health Officer of Toronto a little more than seventeen years ago, and has had charge of the Street Cleaning Department for about five years. The *Mail and Empire* speaks thus, and correctly, as to his work: "His administration of a civic department was almost unique on account of its entire freedom from aldermanic influence. His independence was of a type that brooked no interference, and he conducted the affairs of his Department on purely business lines." We may add to this, that, in addition to his great executive ability, he has an intimate knowledge of both scientific and practical medicine, including Hygiene.

We hope Dr. Sheard will retain his position as Chairman of the Provincial Board of Health, and also as Professor in the Medical Faculty of the University of Toronto. As to his plans for the future we know little or nothing, but we certainly hope he will take a long holiday, as he has scarcely had one for these seventeen years; and we join his vast host of friends in hoping that he will enjoy it thoroughly.

ROYAL BIRTHS IN ENGLAND

One interesting function that a Home Secretary in England must discharge is attendance at all Royal births, as the information is a very serious concern in a possible heir to the throne. It insists upon a member of the Government being present whenever a Royal babe is born. This is to convey the assurance that there will be no substitution, "the fraud of the day," practiced on an innocent public. In commenting on this the *Daily Mail and Empire* of Toronto says: "How even a prescient Home Secretary like Winston Churchill can tell one new born babe from another of the same sex is a puzzle that should interest hospital nurses."

THE ONTARIO MEDICAL COUNCIL.

The medical practitioners of West Toronto territorial district held a very large meeting in the Academy of Medicine, Toronto, March 2nd, under the Chairmanship of Dr. J. S. Hart, the representative of the district in the Council. There was a lengthy discussion on that phase of the Medical Act, Sec. 6, that seems to permit certain Universities or Colleges to have representatives in the Medical Council, although they do not establish or maintain a Medical Faculty. The University of Ottawa, Trinity University, Trinity Medical College, and the Royal College of Kingston, are each at the present time without a teaching faculty in medicine.

It was held that the only universities that should be represented are those of Toronto, Queen's and London, as they are the only ones that have Medical Faculties in existence.

The declining state of the finances of the Medical Council was fully discussed, and it was urged that the Treasurer of the Ontario Medical Council should have the fullest details as to the disbursements and the funds of the Council for traveling expenses, examiners' expenses and daily payments of members.

With regard to the size of the Medical Council, it was held that seventeen territorial, five homeopathic, and eight members from universities were too many, and that the number should be cut down by eliminating the universities which have no Medical Faculties and reducing the territorial representatives to nine and the homeopathies to two. The stand which Dr. Hart had taken on all important questions in the Council was endorsed.

THE MEDICAL PROFESSION IN FRANCE.

The Third Congress of Physicians of France will be opened in Paris April 7th. We learn from a letter which appeared in the *British Medical Journal* March 12th that the object of the promoters is to bring together, without distinction of grade or standing, all doctors practising medicine in France, and to ask them to discuss their various professional interests. It is said that physicians to-day do not derive from their calling alone money enough to provide against old age, and that those who have no resources other than the income obtained from practice must go on working indefinitely, and that it is something more than love of their work which causes so many physicians to die in harness, struggling desperately to retain the favor of patients who distrust their age more than they honor their experience. This is a bitterness which our forefathers did not know, a bitterness bravely and proudly hidden, but not the less touching to those who discover the secret.

Among the causes given for the condition of things are the following: 1. In France during the last forty years the cost of

living has been nearly doubled, while the interest on saved money invested in securities has diminished by two-fifths. 2. The abuse of hospitals, especially in cities and large towns. 3. The organization and growth of friendly societies, which are not inclined to treat the physician with proper respect. 4. Overcrowding in the profession from over-production of doctors. The number has been almost doubled within twenty years. 5. The low standard of entrance examination.

In order to provide a proper remedy for the conditions mentioned, many doctors now propose that there should be an examination for admission into a school of medicine, and that the number of the applicants admitted should be properly adjusted to the needs of the population.

WESTERN UNIVERSITY.

The Honorable Mr. Justice Meredith has recently written a letter to the public press, which is worthy of careful consideration. In it he makes certain positive and definite statements as follows:

The Western University is not in any sense a sectarian institution.

The Toronto University has no stauncher friend than the Western University.

But the University of Toronto is hampered by overcrowding, which prevents it from doing full justice to its students and itself.

With an area of over 260,000 square miles and a population approaching 3,000,000, Ontario should drop the one university in one place idea.

Germany with an area considerably less than that of Ontario has 21 universities well dispersed through its domain, with an average of about 1,500 students each.

New Zealand with an area of about 100,000 square miles and a population of less than one million has one university with four well distributed branches, all the teaching being done at the branches, the principal institution being the examining body only.

Things have come to such a pass that something must be done. What is the best remedy, Surely it will be found in the opening of the doors of the Western University wide enough to take in as many as now overcrowd the University of Toronto.

Formerly it was feared that the opening of the doors of the Western might draw with it provincial aid which Toronto wanted and needed, but happily that has all passed away. In the intimation that the grant to Toronto is to be half a million a certainty is reached which is satisfactory to everyone.

The grant to the Western cannot mean anything taken from Toronto except its hampering over-load of students. It would mean a triple great benefit. 1. Relief to the University of Toronto. 2. The saving of a vast amount of money to parents of Western students. 3. The opening to many, who could not afford, or would not send their children to Toronto, of the means of giving them a University education.

We learn from President Falconer, in an article published in the *Mail and Empire*, March 22nd, that there are registered this season in the University of Toronto and its Faculties, 3,974 students, of whom there are 642 in the Faculty of Medicine.

Under the circumstances would it not be a graceful and kindly act for the university men of Central and Eastern Ontario to ask our wealthy Government to give some assistance to our younger sister institution of the West.

THE GENERAL HOSPITAL EX-HOUSE SURGEONS' ANNUAL MEETING AND BANQUET.

The Association of ex-house surgeons of the Toronto General Hospital held its fifth annual meeting in Toronto, March 28th, under the chairmanship of Dr. C. S. McGillivray, of Whitby. On the same evening its fifth annual banquet was held in the King Edward Hotel. Among the after-dinner speakers were Drs. Roland Hill, T. S. Cullen, Samuel Johnston, Parsons, Chas. O'Reilly, and Middlebro, Mr. T. H. Cameron, and Messrs. Flavelle and Haney. Dr. G. B. Smith, of Toronto, was elected President for the coming year.

A PRINCELY GIFT.

Thus does the *Toronto News* characterize the generous act of Mr. Jno. C. Eaton in offering to build the whole Surgical Wing of the New General Hospital as a Memorial to the late Timothy Eaton. This is an admirable, indeed a magnificent, way to perpetuate the memory of one of the greatest and best men this Dominion has produced.

After the announcement of the gift, February 16th, the following telegrams passed between Sir James Whitney and Mr. "Jack" Eaton:

John C. Eaton, Winnipeg: The government and the legislature appreciate highly your munificent gift to the hospital. An order-in-council has been passed appointing you a member of the board of hospital trustees in place of Dr. Orr, who resigned in order to make the vacancy. It is of great importance that you should be associated in this way with the trust. And I take it for granted that you will accept.

J. P. Whitney.

Sir James Whitney: Your kind message received. I appreciate the honor you have conferred on me, and also the exceeding kindness of Dr. Orr.

John C. Eaton.

Personals.

The Lady Grey Hospital for Tuberculosis was opened at Ottawa February 15th.

Dr. Charles J. Hastings, of Toronto, started on a trip to Vancouver and Prince Rupert, March 24th.

Dr. A. H. Garratt, of Toronto, went to Atlantic City, March 24th, for a brief holiday.

Dr. Forbes Godfrey, M.P.P., of Mimico, returned from Bermuda, March 27th.

Dr. E. J. Barriek, of Toronto, left on a trip for Winnipeg, and the North-West Territory, March 26th.

Dr. Roland Hill visited Toronto March 28th, and delivered the "address of the evening" at the T. G. H. ex-house surgeons' banquet.

Dr. George McDonagh, of Toronto, after a short stay in the South of France, thoroughly recovered his health. At last accounts he was in London, and expected to return to Canada about the end of April.

Dr. Fred N. G. Starr, of Toronto, has been appointed one of the Vice-Presidents of the Section on Surgery for the next meeting of the British Medical Association, which will be held in London, England, in the latter part of July.

Dr. Thos. S. Cullen, of Baltimore, visited Toronto, March 28th, and was presented with a gold-headed cane, Mr. Larkin's prize for the best contribution to medical literature offered for competition among the ex-house surgeons of the Toronto General Hospital.

Dr. W. A. R. Michell, who graduated M.D. from the University of Toronto in 1902, delivered an interesting address before the Aesculapian Club at Toronto on the evening of February 11th. After graduating Dr. Michell spent some years in New Zealand, and then joined the Shackleton Antarctic expedition as surgeon for the party. On his return to England he received from His Majesty the King a handsome bronze medal.

Obituary.

CHARLES NORTON MALLORY, M.D.

Dr. Mallory, of Delta, Ont., died, after a prolonged illness, February 24th, 1910. He graduated from Queen's University in 1888, and soon after commenced practice in Delta.

LESLIE NEWELL, M.D.

Dr. Newell died at his late residence in Sarnia, February 11th, aged 48. He received his medical education at Trinity Medical College, and graduated M.D. from Trinity University in 1887. Soon after graduating he settled in Sarnia, where he soon acquired a large practice. During recent years he suffered much from rheumatism, and died of Bright's disease.

Book Reviews.

SURGICAL DIAGNOSIS. By Edward Martin, M.D., Professor of Clinical Surgery in the University of Pennsylvania. Illustrated with 445 engravings and 8 plates in colors and monochrome. 772 pages. Lea & Febiger, Publishers, Philadelphia and New York.

The general tone of this volume is exceedingly good. It has covered the whole range of surgical diseases, some not surgical, and endeavored to compress its many parts and descriptions into too small a space. There are so many admirable points about the work that it is probably unfair to point out what we consider the weak points. As an instance, the chapter on the upper extremity is quite worth the price of the volume and of the utmost importance to the general practitioner. It deals with the injuries to the hand and wrist that are common in everyday practice, and also with the more obscure. But where there is a chapter on surgical skin diseases we think that it would have been better to have dealt with the skin lesions in that chapter rather than mix them up in different portions of the work. The chapter on the skin is not a great addition to this book, because so many of the diseases described are not truly surgical, and as we mentioned above skin lesions are mentioned in the chapters on the face and the extremities.

In Chapter IV. the definition and description of Shock we consider altogether too indefinite. It dismisses the subject with too little consideration, because Shock is one of the most important and least understood conditions that we meet in surgery. The diseases of the nervous system are most admirably dealt with by Dr. Weisenburg, and from a clinical standpoint is as concise and accurate as it possibly could be in the space allowed for so important a subject. The illustrations and diagrams lend very materially to the understanding of the conditions.

We congratulate the publishers on the great success of this volume from a typographical and illustrated standpoint. They certainly have spared no expense to illustrate this volume completely, and the illustrations are of a very high order.

Those of our readers who are interested in the various forms of physiologic therapeutics (including hydrotherapy, electrotherapy, massage, hyperemia, etc.) will be glad to know that it is proposed to shortly inaugurate a new journal devoted solely

to the delineation of the progress made in these lines of therapeutic endeavor.

The American Journal of Physiologic Therapeutics will be published bi-monthly, and the subscription price will be \$1.00 a year. The names and addresses of all interested physicians should be sent in, and those desirous of subscribing at once may enclose their remittance when writing. It is to be hoped that a widespread interest may be aroused in this matter. Write now, while this is fresh in your mind, to *The American Journal of Physiologic Therapeutics*, 72 Madison Street, Chicago.

PROGRESSIVE MEDICINE. A quarterly digest of advances, discoveries and improvements in the medical and surgical sciences. Edited by Hobart A. Hare, M.D., Professor of Therapeutics and Materia Medica, Jefferson Medical College, assisted by H. R. M. Landis, M.D. March 1, 1910. Vol. XII., No. 1. Lea & Febiger, Philadelphia and New York. \$6 per annum. The subjects dealt with in this volume are both medical and surgical, as well as those dealing with children, nose, throat and ear. The articles are, as always, the very best of their class, and we repeat what we have many times said, that there is no book in the English language to compare with it.

HIGH FREQUENCY ELECTRIC CURRENTS IN MEDICINE AND DENTISTRY: Their Nature, Actions and Simplified Uses in External Treatments. By S. H. Monell, M.D. Finely illustrated with special instruction plates. 8vo, 448 pages, extra cloth, price \$4.00 net. Published by William R. Jenkins Co., 851-853 Sixth Avenue, New York.

A wonder book of simple things. Interest begins at once in the first chapter, in which electricity and its mysteries are defined. This particularly is conspicuous in the section, "Life Phenomena and Electricity," which tells what science has found out about how nature works in the human body, all explained in the most interesting manner. Then follow two chapters on Physiologic-Medical Properties of High-Frequency Currents, including a wonderful mass of convincing facts. And the section following these chapters concerning what others are doing with high-frequency currents will prove astonishing. Word pictures of treatment follow, and then twenty of the most absorbing chapters teaching in detail the advancement in treatment of various stages of diseases in which high-frequency currents can be made of benefit to patients. Every one of these twenty chapters is built on the physiologic foundation of the preceding sections.

"High-Frequency Currents in Medicine and Dentistry" was written to assist the progressive surgeon, physician and dentist, and for all who have electricity in their homes. The use of high-frequency currents has been made a household necessity as well as a medical and surgical boon.

A MANUAL OF MIDWIFERY. By Henry Jellett, B.A., M.D., F.R.C.I., Professor of Midwifery, Trinity College, Dublin; etc. With the assistance in special subjects of W. R. Dawson, M.D., F.R.C.P.I.; H. C. Drury, M.D., F.R.C.P.I.; T. G. Moorhead, M.D., F.R.C.P.I., and R. J. Rowlette, M.D. Second edition, with 17 plates and 557 illustrations in the text. London: Bailliere, Tyn dall & Cox. 1910.

When the first edition of this text-book appeared we had much pleasure in giving a detailed review, and at that time expressed the opinion that it was a very valuable book both for the student and the practitioner. The only difficulty so far as students are concerned is the size of the book, being somewhat too large for the ordinary student's needs. It is, however, an admirable book for the general practitioner, as it expresses fairly well the views of the great Dublin School of Obstetricians, which in some respects at least is the best in the world. We consider the second edition better than the first, and that means a great deal. One of the most important improvements is the new arrangement made whereby Acute Yellow Atrophy, Hyperemesis, Gravidarium and Eclampsia have been grouped together in a chapter entitled Auto-Intoxication of Pregnancy.

THE PREVENTION AND TREATMENT OF ABORTION. By Frederick J. Taussing, M.D., Lecturer in Gynecology, Medical Department Washington University; Obstetrician to the St. Louis Maternity Hospital. Fifty-nine illustrations. St. Louis: C. V. Mosby Co. 1910.

This is recommended especially for the general practitioner and is in all respects an admirable book. The author's descriptions of preventive and actual treatment are excellent. We have no adverse criticism of any sort to offer so far as they are concerned. We desire, in addition, to say that the publishers have done their work in a manner that is worthy of all praise.

THE PRODUCTION AND HANDLING OF CLEAN MILK, including Practical Milk Inspection. By Kenelm Winslow, M.D., M.D.V., B.A.S. (Harv.), formerly Instructor in Bussey Agricultural Institute and Assistant Professor in the Veterinary School of

Harvard University; author of a text-book on Veterinary Materia Medica and Therapeutics, Chairman of the Committee on Milk of the Washington State Medical Association, etc. And **ESSENTIALS OF MILK BACTERIOLOGY**. By H. W. Hill, M.D., Minnesota State Board of Health Laboratories, Chairman of the Committee on Laboratories of the American Public Health Association, formerly Director Boston Board of Health Bacteriological Laboratory. Second edition (twice as much matter as in first edition). Size $6\frac{3}{4} \times 9\frac{1}{4}$, xiv + 367 pages, 101 illustrations, including 1 colored and 16 full-page plates. Price, \$3.25. William R. Jenkins Co., Publishers, 851-853 Sixth Ave., New York.

A complete, plain, practical and authoritative guide to the production, inspection, analysis; handling and distribution of milk for veterinary, agricultural and dairy students, farmers, health officers, milk inspectors, practical dairymen, sanitarians, country gentlemen, physicians and others interested in matters pertaining to dairying and hygiene.

No movement is attracting more attention at present, nor is any more important as regards the health of the country. Dirty milk causes most of the infant mortality in summer.

Health authorities all over the civilized world are enforcing higher requirements for market milk. This behooves all connected with the dairy industry to keep informed of the latest knowledge about the matter. The book gives all practical details about clean milk from the time it leaves the cow until it reaches the consumer. A very practical part of the book for students of dairy bacteriology consists in the laboratory experiments by Professor Conn. These give all the details for determining the common bacteria in milk and for studying their characteristics. They also show how to determine the effects of pasteurization; of contamination of milk with dirt and dirty utensils; the effects of improper cooling and care, etc. Moreover, methods of milk analysis are given and directions for the practical examination of cream, butter and cheese.

While the work is scientific or exact, it is written as well for the intelligent layman. The writer has had perhaps unusual facilities for studying all sides of his subject, being a practising physician, a graduate of a medical, veterinary and agricultural school, and he has had practical experience with animals and with the production and distribution of certified milk, and he has also been an official in charge of a laboratory having supervision over the milk supply of a large city.

The chief feature of this work is its practical and compre-

hensive character. This may be appreciated by a brief summary of the chapters:

Chapter I. (41 pp.)—Germs in their General Relations to Milk.

Chapter II. (12 pp.)—Composition of Milk and Cream and their Products.

Chapter III. (12 pp.)—Milk Products.

Chapter IV. (14 pp.)—Feeding for Milk.

Chapter V. (21 pp.)—Housing and Care of Cows.

Chapter VI. (45 pp.)—Handling of Milk and Cream.

Chapter VII. (16 pp.)—Cost of Producing and Handling Milk.

Chapter VIII. (12 pp.)—Some Hints Concerning Milk Distribution.

Chapter IX. (59 pp.)—Milk Inspection.

Finally, in the chapters on Essentials of Milk Bacteriology, the latest classification of bacteria and methods of bacterial analysis of milk are described by a specialist in this subject.

Appendix.—Here may be found detailed descriptions and plans for barns, milk houses and city dairies; a description of the milking machine and much other useful knowledge concerning dairy matters.

DISEASES OF THE LARYNX. By Harold Barwell, M.B. (Lond.), F.R.C.S. (Edin.); Surgeon for Diseases of the Throat, St. George's Hospital; Laryngologist Mount Vernon Hospital for Diseases of the Chest; Consulting Surgeon for Throat and Ear Diseases, Cripples Home for Girls, N.W. Henry Frowde, Oxford University Press; Hodder and Stoughton, Warwick Square, E.C., London.

This is an admirable manual of diseases of the larynx; and while written expressly for the use of general physicians and surgeons together with students, it will be a valuable addition to the library of the specialist, as it brings the methods of examination, diagnosis and treatment of throat diseases down to the most recent date. The perusal of its pages refreshes the memory concerning things that are valuable and old, while at the same time the attention is arrested by a description of many of the recent advancements that have been made in throat surgery. The cuts, while not elaborate, are to the point, and should be of much value to the student. The formulæ in the Appendix also seem to be well chosen.

Miscellaneous.

The Harbor of Convalescence.

While the physician is always on the alert to meet and overcome any of the various complications or serious symptoms that threaten the patient during the acute stages of a severe constitutional illness, it is not infrequently the case that insufficient attention is given to the effort to hasten a return to normal health after the subsidence of the acute symptoms. The rocks and shoals of active disease have been successfully evaded and the medical pilot has brought his more or less damaged human craft into the peaceful harbor of convalescence. At this point both patient and attendant are apt to "rest on their oars" with the idea that the "*vis medicatrix naturæ*" is all-sufficient to bring back the normal vitality, without the special help of medication. It can scarcely be said that such a "*laissez faire*" policy is to the best interest of the patient. Unless the reparative and restorative forces of the organism are encouraged and fortified a slow and retarded convalescence is apt to supervene. The essentially devitalizing influence of the morbid agent in Typhoid, Grippe, Pneumonia, etc., is exerted primarily and principally upon the blood itself and a readily tolerable, promptly assimilable and thoroughly efficient hematinic, such as Pepto-Mangan (Gude), is always serviceable and valuable. As Pepto-Mangan (Gude) is palatable and non-irritant, it exercises no disturbing effect upon appetite or digestion—in fact it increases the desire for food and, by its general tonic action, assists in its absorption and assimilation. Its freedom from constipating effect also renders it especially suitable in the restorative treatment of the convalescent invalid.

Denver Chemical Co. vs. Colorado Chemical Co.

Early in the history of the Denver Chemical Mfg. Co. our sole product, Antiphlogistine, was nicknamed Denver Mud and for many years has been known and sold under that name.

The merit of our product, years of indefatigable labor, and the expenditure of vast sums of money have created a world-wide business, which has led many individuals and firms to manufacture imitations of Antiphlogistine, and within recent

years a few firms have been manufacturing and selling a plastic dressing under the name of Denver Mud, frequently misleading purchasers, who, in calling for our product under its nickname, have not received the original preparation.

In view of this, we brought suit against the Colorado Chemical Co. of Chanute, Kansas, which has recently been decided. A great amount of testimony was taken in St. Louis, Kansas City, New York and other parts of the country, defendant's counsel attending and cross-examining complainant's witnesses. After contesting the case to its conclusion no reason was presented by defendant on final hearing why a decree should not be entered in this Company's favor, and, on the testimony, a decree was granted accordingly. By the perusal of this decree which you will find opposite, you will see that we have been granted all that was claimed in our bill.

UNITED STATES CIRCUIT COURT.

"This cause coming on to be heard in the United States Court House at Kansas City, Kansas, on the 26th day of January, A.D. 1910, the parties having agreed that it be there heard instead of in the Third Division, Mr. Wetmore appearing for the complainant and Mr. Jones for the defendant, upon the testimony in the case and due consideration having been had, it appears that the complainant is entitled to have a decree in accordance with the prayer of the complainant and it is hereby ordered, adjudged and decreed that the defendant, its officers, attorneys, servants, agents, workmen and employes and each and every of them be and they hereby are restrained and enjoined from selling, offering for sale or advertising or procuring the sale of, any medicine or preparation under the name of "Denver Mud," whether printed or in any manner inscribed, so that the words "Denver Mud" shall appear upon the wrapper of or advertisement of the defendant's said preparation, or upon the letter head or other papers used by the defendant in its communications with the public or the trade in connection with its said preparation, or printed, written or inscribed in any manner whatever, or from representing, directly or indirectly, or furnishing others with the means of representing, directly or indirectly, that any preparation made or sold by the said defendant, its attorneys, servants, agents, workmen or employees, is the preparation and proprietary medicine made and sold by the complainant as aforesaid and known to the trade and to the public as "Denver Mud" as well as "Antiphlogistine," either by selling the same under any name so closely resembling the

name "Denver Mud" as to be calculated to be mistaken therefor, or from violating the rights of the complainant hereinbefore set forth, in any manner whatsoever.

And it is further ordered, adjudged and decreed that the defendant deliver up any and all labels, advertisements or circulars and any and all cans or packages of the defendant's preparation having labels or wrappers with the said words "Denver Mud" printed upon them, as aforesaid, to be destroyed, and that a writ of injunction issue in accordance with this decree and it is further ordered, adjudged and decreed that the complainant recover from the defendant the profits made by the said defendant from the sale of the plastic dressing mentioned in the complaint under the name of "Denver Mud" and that the complainant recover from the defendant its damages to be assessed as the court may direct and that the defendant pay the complainant the costs of this suit to be taxed.

Dated this 3rd day of February, A.D. 1910.

JOHN C. POLLOCK, Judge.

Dr. L. L. Gray, of St. John, Mo., reporting the outlines of a case of enuresis-nocturna, treated with sanmetto, says the case was that of a maid thirteen years of age, who had suffered with enuresis from infancy. She was old enough to realize her condition, and keenly felt its effects. She acted as though she thought everyone she met knew her troubles, and consequently she was shy, unsociable, ashamed to be seen in company. Strangers would ask if she was entirely sane.

He gave her a bottle of sanmetto, told her mother to give her all assurance that it would cure her, if properly taken. He says a second four-ounce prescription verified the truth of his statement. It did cure her, and she became a perfectly formed young lady, intelligent and sociable, the downcast countenance gone and life again worth living.

Disease Carriers.

Dr. Haywood has observed that flies were numerous about spittoons used by pulmonary tuberculosists. He fed some flies on sputum, and found that they died in two days. The "specks" or feces of these flies were rubbed up with sterile water and injected into guinea pigs, and the pigs developed genuine cases of consumption. The activity of the fly as a carrier of consumption is here clearly shown.—*Ex.*

Palliation vs. Prudence.

Because of its duration, the unusual degree of its intensity and the periodicity of its recurrence, the pain associated with menstruation should always be dealt with in the most guarded manner possible; for an unwarranted use of such habit-inviting drugs as opium and the synthetic analgesics invariably exposes the patient to an addiction to their employment.

In the treatment of dysmenorrhea, whether it be congestive, obstructive or neuralgic in character, the immediate and future welfare of the patient is always best served by the employment of a utero-ovarian anodyne and stimulant to the exclusion of all other pain-allaying agents. Experience has proved that palliation in the case of menstrual disturbance should not be had at the cost of prudence.

The timely administration of Ergoapiol (Smith) in any one of the several varieties of dysmenorrhea always serves to at once relieve distress and promote functional activity of the uterus and its appendages. When used during the menstrual visitation, the anodyne and restorative action of the preparation is notably pronounced.

By reason of its exceptional antispasmodic and tonic influence on the entire reproductive system, Ergoapiol (Smith) is of especial value in instances where a debilitated state of the pelvic viscera is the sole or a contributing cause of the distress attending each catamenial visitation.

In dysmenorrhea among individuals just entering on menstrual life, Ergoapiol (Smith) proves immeasurably more beneficial than such sedative agents as the bromides and viburnums, in that it exerts a marked and prolonged invigorating action on the entire reproductive apparatus.

In instances where the menstrual discharge is membranous or clotty in character, Ergoapiol (Smith) can be relied on to increase its fluidity and thus facilitate its passage from the uterine cavity.

Results are ordinarily most satisfactory when the preparation is administered in doses of one capsule four times a day before and during the menstrual flux.

Dr. Geo. G. Groff states that house flies do not exist in the Island of Porto Rico.

In Paris cremation of the dead is on the increase.

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Original Communications.

ON RED DEGENERATION OF UTERINE FIBROIDS: WITH REPORT OF CASE.

BY J. F. W. ROSS, M.D., C.M., TORONTO,

AND

A. C. HENDRICK, M.A., M.B., TORONTO.

Bland Sutton¹ writes that among the new things which the surgical treatment of uterine fibroids has brought to light is a knowledge of that change to which these tumors are liable, known as "red degeneration."

This increase in our knowledge of the pathology of fibroids is extremely useful in diagnosis, for red degeneration is especially liable to occur in fibroids lodged in a pregnant uterus, and it has the effect of rendering them painful.

Red degeneration, even in extreme degree, in fibroids of a non-pregnant uterus, may be quite devoid of pain, however—also a gravid uterus may contain a number of fibroids in its wall and yet only one fibroid may show red degeneration and become very painful, whilst the others are quite insensitive.

In the early stages of this change the fibroid exhibits the red color in streaks, but later it permeates the whole tumor.

The usual color of a uterine fibroid on section is pale yellow, or in the case of the pure myoma a reddish grey, especially in the smaller and apparently recent ones. This pure myoma is, however, firmer than the normal uterine muscle.

The fibroid proper is pale, almost white, in color and extremely dense, so that it cuts with difficulty, the cut surface having a watered silk appearance due to the lamellae passing in various directions reflecting the light differently.

When one of these tumors undergoes the red degeneration it

becomes a deep red or mahogany tint on section either in streaks or throughout the whole substance, and it is with the significance of this change we intend dealing.

First of all, let us review briefly the histogenesis and structure of uterine fibroids in general, as this has an important bearing in discussing the various theories of the causation of "red degeneration."

According to Pilliet² fibroids begin in the walls of the uterine capillaries, *i.e.*, they are angei-myomata, and he claims that this also explains the origin in fibromata of peri-vascular sarcomata (perithelioma), since both are tumors of a vascular series.

However, most observers are agreed that fibroids begin as proliferations of muscle cells, but whether peri-vascular or of the true uterine parenchyma is disputed. Thus, all fibroids are primarily myomata and only secondarily become fibrous or fibro-myomata.

The frequent difficulty in distinguishing between the pure myoma, or non-striped muscle neoplasm, and the pure fibroid may be explained by regarding the majority of the "fibroids" as originally muscle tumors, which, in the course of the growth, become gradually changed into fibrous tissue, not by an overgrowth of the connective tissue framework, although this may occur coincidentally, but by a direct conversion or metaplasia of the muscle fibres into connective tissue. The prevalent view, of course, is that the muscle undergoes atrophy and replacement.

Such metaplasia is to be regarded as an adaptation on the part of the cells to altered environment, and not of necessity and primarily to altered function.

Thoma has shown that as a result of immobilization of a joint by surrounding adhesions, etc., the cartilages covering the articular surfaces disappear and are replaced by mucoid and connective tissue. Physiological metaplasia is seen in transformation of cartilage into bone and connective tissue cells into fat cells.

Fibroids are said never to develop before puberty or to become active after the menopause, hence the stimulus producing their proliferation seems to have some relation to sexual activity.

Fibroids are primarily interstitial or intramural, the capsule being a secondary development due to the mechanical pressure of the growing tumor. Small fibroids are often devoid of capsules.

Uterine fibroids possess what is termed a "collapsible circulation" just as the normal uterine tissue or other tidal organ does; that is to say, the uterine capillaries possess a wall made

up of a single layer of cells which are capable of changing with contraction or peristalsis, and relaxation or congestion of the uterus as in menstruation and pregnancy, from a thick palisade epithelium to extremely flattened cells like a true endothelium. Nor is this the only place where these changes in the cells have been observed.

Much the same phenomena are described in the case of the endothelium of the peritoneum, where pseudo stomata are developed by retraction of the endothelial cells. The same thing happens to the transitional epithelium of the bladder. On distension of this viscus the cubical epithelium becomes for the time flattened or squamous in type.

Small fibroids have their own fissural or collapsible circulation, and it is only in the larger tumors that the capsule may assist in their nutrition.

Causation. As to the aetiology of "red degeneration" a number of theories have been advanced.

Pregnancy undoubtedly predisposes, though it may occur in spinsters. Some authorities consider that the essential and characteristic change is due to a thrombosis of the blood vessels in the red areas.

Professor Lorrian Smith and Shaw³ found the change in four specimens, three associated with pregnancy. Staining by Weigert's fibrin stain, there was no evidence of recent or old extravasations of blood.

But in these specimens the other portions of the tumors not involved in red degeneration showed hyaline degeneration, and it seemed important to investigate whether "red degeneration" was always associated with this hyaline change.

Two of their patients showed toxemic symptoms, with active leucocytosis and bacteria in the tumors; streptococci in one and diplococci in the other. Neither of the other two showed either leucocytosis or bacteria.

Professor Smith considered the bacteria as probably a secondary invasion, predisposed by the thrombosis, and that the thrombosis was due to the pregnancy hampering the circulation and the puerperium increasing the coaguability of the blood.

The objections to this explanation of the causation are: (1) That this condition of red degeneration seems to begin with the pregnancy very often, as shown in the case we are reporting, or to continue throughout its whole course, or until it is interfered with.

Thrombosis is, we know, practically always due to septic infection, and very probably in the cases reported by Smith and

Shaw the thrombosis was a secondary condition and not the primary cause of the "red degeneration."

Mr. E. H. Tweedy⁴, *Lancet*, 1909, Vol. 1, page 1756, reported a case before the Royal Academy of Medicine in Ireland; the woman had been sent to him six months pregnant and with a large myoma; no other history was given; he kept her over two months in the hospital, and induced labor at term—the child was dead. On the fourth day her temperature rose to 103° F. and the abdomen became very tender. Sir William Smyley saw her in consultation and advised postponement of operation; she gradually got better and the tumor was removed by supra-vaginal hysterectomy. It showed in a very characteristic manner red degeneration, which was a disease Mr. Tweedy thinks rarely occurs save in pregnancy. He considered high temperature characteristic, and thought it might be due to absorption of toxic matter from the tumors, apart from germ invasion; the temperature is probably secondary. It has been stated that almost all fibroids associated with pregnancy show this change, but Keen (Keen's *Srg.*, Vol. 1, 773) and Fairbairn⁵ deny this.

Again, it has been suggested that in pregnancy the entire uterine tissue is in a highly vascular condition, and something interfering with the blood supply, causing stasis in the veins might cause a diffusion of the blood-pigment.

Taylor⁶ (Proc. Roy. Soc. Med. Sec. Obs. and Gyne., 1908-09, Vol. 11, Pt. 2, p. 180) reports a case of a woman aged 45, married 21 years, 3 children, the last 17 years ago.

The patient had been ailing since November, 1906, when she had a severe attack of pain in the lower abdomen, which confined her to her bed for three weeks; since then there has been gradual and progressive enlargement of the abdomen; menstruation irregular.

In spite of the constant abdominal pain the patient kept about until recently, when she was again confined to bed for about two weeks on account of severe abdominal pain; also some bearing-down pain. On Jan. 8, 1909, patient was admitted in Chelsea Hospital for Women—under care of Dr. Giles—complaining of pain and swelling. Jan. 11—Supra-vaginal hysterectomy was performed. The specimen removed consisted of the body of the uterus enlarged by fibroids; it weighed 4½ lbs.

In the posterior wall of the uterus was a globular fibromyoma, 4 inches in diameter, encapsuled, softish, and a uniform mahogany-red color. In the anterior wall of the uterus was a globular fibro-myoma 4 inches in diameter, encapsuled, hard, white-whorled and free from any sign of degeneration.

Histologically the red fibroid showed loss of the outlines of

the muscle fibres, with feeble and diffuse straining, with nuclear ghosts and disappearance of the nuclei.

The association of pregnancy with red degeneration has been spoken of, but here pregnancy seems too far removed—17 years previously—to have any significance.

Pain, which was mentioned above, was the most marked feature in the history, whilst tenderness was not elicited on palpation, there was no pyrexia, but some loss of flesh.

Taylor concludes that some local nutritional disturbance in the degenerated fibroid was responsible for its condition. He also stated that in 30 specimens examined thrombosis of the vessels was a rare condition, though found occasionally.

Lastly, he endeavored to ascertain the nature of the coloring matter present by squeezing out the tissue juices in a muscle-press, and, after suitable dilution, examining with the spectroscope.

Taylor found the two-banded spectrum of oxy-hemoglobin—reducible to the one-band by Stoke's fluid and $(\text{NH}_4)_2\text{S}$.

Taylor therefore concluded that red degeneration of uterine fibroids was an aseptic necrobiosis of the tumor-cells, accompanied by a diffuse straining of the tissues with hemoglobin due to some local disturbance of nutrition.

Bland Sutton⁷, R.S.M., p. 300, who first became acquainted with the red change in fibroids in 1901, had up till now placed several fibroids in the hands of bacteriologists, hoping to find some organism which might be accounted responsible for "red degeneration," but was unsuccessful until quite recently, when the following case is reported: A primipara, aged 30, two months pregnant, had been in London for the purpose of consulting a doctor, who, after examination, expressed himself as satisfied with her condition. On her return journey she was seized with sudden severe pain that necessitated her leaving the train. A doctor was consulted, who diagnosed ectopic gestation with rupture.

Bland Sutton was called in consultation 24 hours after onset of the symptoms and found a large tumor, probably a fibroid, occupying the right side of the abdomen and reaching to the liver. He considered that some change had taken place in the tumor, consequent on pregnancy: it was also possible that it might be an ovarian cyst with a twisted pedicle. The tumor was very tender—patient's pulse 112, temperature 100° F.

On opening the abdomen the tumor proved to be a large subserous fibroid with a broad stalk, the uterus was gravid, and as it contained several fibroids the size of golf balls it was removed.

On examining the big fibroid in the course of operation an

area of softening 5 cu. c.m. in diameter was found; it appeared acutely inflamed, being covered with flakes of lymph. As soon as the operation was completed the uterus was packed in sterilized waterproof material and conveyed direct to the bacteriological laboratory.

When the large fibroid was bisected they found a pyriform patch of red softening equal in size to one-third of the whole area of the tumor. The remainder of the fibroid was very hard, but the degenerated area had become so soft that the finger could be pushed into it with ease. From this infarcted area a pure culture of "*Staphylococcus pyogenes aureus*" was obtained, using the usual precautions.

A careful examination of the tissues of this degenerated area showed the vessels thrombosed, and in some situations the clot had undergone partial organization.

The interstitial fibroids exhibited the red change in streaks, but no micro-organisms were detected in them. However, Sutton expresses the opinion that the red change is not due to micro-organisms, but to mechanical interference with the circulation.

Mr. J. S. Fairbairn⁸ reports a case of removal of a red degenerating fibroid from the anterior wall of a pregnant uterus without disturbing the pregnancy.

The patient, married, aged 34, had one child 17 years previously, and none until now. Menstruation had always been regular, the last period being in February 2, 1908. She had no symptoms until six days before admission to hospital, April 23rd, 1908. Six days before admission she had an attack of pain in the abdomen and back and slight uterine hemorrhage; as the pain, though varying in intensity, continued and prevented her from working she came to hospital for advice and was admitted. The patient did not appear ill.

On examination a rounded tumor was felt in the abdomen, reaching to just above the umbilicus; it was movable, elastic, and very tender. The tumor was considered to be a fibroid, and in order to save the child, myomectomy was performed. The tumor weighed 1.5 kilos; on section it had a characteristic raw-meat appearance, and the stale odor of a necrobrotic fibroid.

In 19 cases of red degeneration investigated by Fairbairn 16 had pain, in eleven it was severe and the chief cause for the patient seeking advice.

In conclusion, he stated that in the majority of cases the diagnosis of "red degeneration" would prove correct, when pain, tenderness and softening of the tumor were present in a fibroid in a pregnant uterus.

Thus far we have stated two theories as to the probable cause of this fleshy necrobritic change, viz.:

1. Thrombosis of the vessels of the fibroid with necrobritic change in its cells, and diffusion of the blood-pigment throughout its substance. These observers consider the thrombosis due to mechanical causes, but you will agree with us, we believe, when it is stated that a thrombosis is most always due to a microbial invasion either of the vessel wall damaging the endothelium and causing conglutination of the red corpuscles or hemolysis and destruction of the corpuscles themselves, as after extensive burns, in eclampsia, and in severe secondary anemias accompanying cancer.

But intoxications pure and simple are rare compared with infections and bacterial invasion.

Even in what are termed "bland thrombi" bacteria are being constantly detected or cultures gained while conversely as shown by Welsh and Lubarsch, if known cases of infection be carefully studied, *e.g.*, suppurative cases, pneumonia, appendicitis, etc.—capillary thrombi in brain, lungs, kidneys, etc., are found to be very frequent.

There are different views as to how the bacteria act; thus, some have drawn attention to their hemolytic action, and have demonstrated that *e.g.*, the pyococcus aureus is most actively hemolytic, and is found associated with thrombi very often.

Some have contended that *e.g.*, that in the case of tuberculosis or typhoid, these are not hemolytic bacteria, although capillary thrombi are frequent, but Welsh draws attention to the fact that in many of these cases examination reveals not the microbes of the main disease, but those of some secondary affection, *e.g.*, streptococci, bacillus coli, etc.

There is also diversity of opinion regarding the presence of the bacteria in the blood stream; some contending that this is not always the case, and that parenchymatous inoculation of pyococci leads in the majority of cases to thrombosis of the vessels in the immediate neighborhood.

The adherents of the second theory consider that "red degeneration" depends upon some mechanical change in the circulation causing stasis of the blood in the vessels, aseptic necrobritic change in the tumor cells, and diffusion of the blood-pigment. They deny a microbial invasion as the primary cause, although Smith and Shaw in their series of four cases report one fibroid yielding pure staphylococci, and one a diplococci; whilst Bland Sutton, who is an adherent of the mechanical theory, reports one case showing staphylococci pyogenes aureus, in pure culture.

From what has been stated, it seems very probable that the

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condition of "red degeneration" is due to a germ capable of causing hemolysis.

This germ need not of necessity be a very virulent organism; for instance, the streptococcus pyogenes, staphylococcus pyogenes aureus, and albus para-pneumococcus and the colon bacillus have been shown by Lea⁹ and Sidebotham to possess hemolytic properties.

These observers, in examining the lochial discharge from the cavity of the uterus by careful technique, found staphylococcus albus, the organism usually present, but in a few cases the aureus.

Hemolytic and non-hemolytic colonies often existed together on the culture plates.

Organisms were found in 80 per cent. of the cases examined; in 20 per cent. of the cases diplococci were present. They were facultative anaerobes growing equally well aerobically and anaerobically. Many of the colonies showed well-marked hemolysis.

The organisms present in the puerperal uterus were precisely those which have been found frequently in the vaginal secretion during pregnancy. Failure to find germs is usually due to the culture medium. The course of the puerperium was in the great majority of cases entirely uninfluenced by the presence of the organisms. Hemolysis does not form a distinction between saphrophitic and pathogenic organisms.

Having shown that hemolytic bacteria are always in the immediate environs of the fibroid—*e.g.*, the staphylococci, diplococci, streptococci, in the vagina and cervix, and the colon bacillus in the intestine—we have only to explain their probable mode of entrance into the fibroid. Since this red change is a frequent complication of fibroids in pregnancy, it seems probable that the micro-organisms may invade the uterine wall more readily in this condition. The germs are carried very probably by the wandering cells of the endometrium into the blood stream and then into the fissural vascular system of the fibroid; here they become stranded, forming capillary thrombi, very probably. Owing to this inoclusion of the bacteria in the sluggish or occluded circulation of the fibroid, they may become more virulent, just as it has been shown that by occlusion of bacteria in the caecum of the rabbit this may increase the virulence of the bacteria. Or, as observed often in appendicitis, occlusion of the appendix by some obstruction, or by kinking, may increase the virulence of the germs in its distal portion, and hence the lesion often takes place there. Then, owing to the hemolytic powers of the bacteria, the red cells become disintegrated, portions of the cells

becoming lodged in the capillaries of the muscle fibre, causing hyaline thrombi, whilst the pigment (hemoglobin) diffuses throughout the tissue. (Adami Sys. Path., p. 903.)

According to Wells¹⁰, the staphylolysin, or streptocolysin, seem to differ from the ordinary cellular hemolysin in certain features, *e.g.*, reaction to heating, etc. They are simply toxins for the red cells, uniting directly with the receptors without the intervention of an intermediary body.

Bacterial hemolysins are all merely toxins with a particular affinity for red cells.

In the case of this red change in fibroids of a non-pregnant uterus, it seems reasonable to suppose the infection is from the alimentary tract, probably the rectum by the colon bacillus, the predisposing cause being pressure of the tumor upon the bowel wall causing irritative peritonitis, and so injury to its walls. It is significant that in the case reported above of Fairbairn's, the red fibroid was the one in the posterior wall of the uterus, the one in the anterior wall being normal.

The above explanation has been proposed by Gebhard and others¹² (Pathological anatomy). The red fibro-myomata show loss of the outlines of the muscle fibres, with feeble and diffuse staining, with nuclear ghosts or disappearance of the nuclei. In our case there was some parenchymatous degeneration, with slight edema and disappearance of the nuclei. The pigment did not react to the Perl's test, hence seems to be unaltered hemoglobin.

Symptoms.—Pain is the most frequent symptom in a fibroid undergoing red degeneration; indeed, a painful fibroid in a pregnant uterus is almost pathognomonic of this change.

As stated above, in 19 cases investigated by Fairbairn, pain was present in 16 cases, and in 11 of these was severe, and the chief reason for the patient seeking advice. In the case here reported by us pain was the only symptom complained of until the interruption of the pregnancy. Pain may be severe enough to simulate an ovarian cyst with twisted pedicle or a ruptured tubal pregnancy.

Kelly and Cullen¹¹ report 5 cases of myomata associated with pregnancy, in three of which there was pain; two complaining of constant pain in the lower abdomen and the third of a jumping and gnawing pain. On the other hand, tenderness does not seem to be a very marked symptom; in the case we are reporting there was very little complained of. Tenderness, like high temperature and softening, seem rather to exist only in the later stages of the degeneration. Hemorrhage from the uterus is unusual.

Diagnosis.—The previous knowledge of the existence of a

fibroid in a uterus, the intervention of pregnancy and pain and tenderness of the fibroid, subsequently with perhaps high temperature are almost pathognomonic of red degeneration.

Prognosis.—When the symptoms are mild or moderate in type they will disappear if the patient be kept in bed. Red degeneration, even in extreme degree in non-gravid uteri are often painless; this is also true in some cases of pregnancy, as when multiple fibroids exist one may be painful, the others insensitive.

Treatment.—When mild in degree rest in bed, when severe hysterectomy.

The patient F. G. was admitted into the Gynecological Service of the General Hospital, Toronto, on Jan. 18th, 1910, under the care of Dr. J. F. W. Ross, complaining of pain and uterine hemorrhage.

The patient is an intelligent woman, aged 36, married 5 years previously. Became pregnant soon after marriage, seeing only one period, miscarried at 2 1-2 months; there was no pain during these 2 1-2 months and only a little pain at the time of the miscarriage. Remained in bed seven days, the following month menstruated, being free from any bleeding in the interval. Had a second miscarriage 6 months later of a 3 months' fetus, but there had been no pain and no bleeding until just at the time of miscarriage, when there was bleeding for one week, then well with no bleeding; menstruated the following month. The patient thought heavy lifting brought on these two miscarriages.

Patient perfectly well for the following three years, menstruating regularly and suffering neither pain nor hemorrhage; she had no idea of having a tumor, and was working steadily. During this interval her husband was absent from home. He returned 8 months ago, and after a respectable period the patient became pregnant again.

Patient says she suffered a great deal of pain right from the beginning of this pregnancy. The pain was localized by her in both sides internal to the ovarian region, and described as a sticking pain. Exercise made the pain much worse. There was some tenderness also, especially after walking, but the tenderness was never a marked symptom, just the pain. The patient was only doing her housework at this time. There was no bleeding at any time during the pregnancy, not until the threatening miscarriage, to be shortly mentioned.

The patient noticed she did not correspond in size to the month of pregnancy; at two months the patient says she seemed like four. Three weeks previously to coming to the Hospital the

pain grew so severe that a doctor was sent for; they felt like labor pains, the patient stated; there was only very little hemorrhage.

The patient was ordered to bed for two weeks. The pains were so much relieved at end of this time that the patient was allowed up. Patient was up one day when the pains returned, also some bleeding. Patient again returned to bed, but at the end of another three days miscarried a 4 1-2 months fetus; this was three weeks before coming to the Hospital. The bleeding the first week after the miscarriage was not very severe, but both the bleeding and the pain gradually grew worse, and at the end of another two weeks patient was sent to the Hospital, where a diagnosis of fibroid was made and sub-total hysterectomy performed, leaving the right ovary. The patient made an uninterrupted recovery.

Specimen.—Consisted of the uterus about the size of the fetal head at term, round, comparatively evenly enlarged, and containing an interstitial fibroid. On section the fibroid was seen to occupy almost the entire thickness of the right posterior uterine body, the uterine canal being elongated to 4 or 5 inches and pushed well to the left, being encroached upon by the tumor.

The cut section showed the characteristic raw-beefsteak appearance of red fibroids, with some softening in the interior of the tumor.

Microscope showed some edema with hyaline degeneration of the muscle cell, and loss of nuclei.

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THE EYE IN DISEASES OF THE EAR.*

BY GILBERT ROYCE, M.D., TORONTO.

The advance that otology has made during recent years accounts, no doubt, for the interest which is being taken at the present time of the effect upon the eye of aural disease. This progress has brought forth searching investigations of a physiological and pathological character, so that direct relationships have been shown to exist that heretofore seem to have been completely ignored. The trifacial nerve innervating both the ear and the eye, the correlation of the reflex centres of both the optic and auditory nerves, the motor and sensory ganglia, connection of the trifacial, the facial nerves, etc., demonstrate clearly the close association that exists between the two most important sense organs.

Optic neuritis occurring as the result of aural disease has long been known and was formerly thought to be the only ocular trouble resulting from aural lesions. Since then nystagmus, hemianopsia, ocular paralysis and blepharospasm were observed. Politzer cites examples of myosis and disturbances of accommodation as having their origin in aural conditions.

Some claim that nerve changes may be observed at times from suppuration of the tympanic cavity without evidence of intracranial affection, and explain it as being due to damage to the carotid plexus of the sympathetic inducing vaso motor disturbance in the optic nerve, or that these changes might also be brought about by the tympanic suppuration, producing irritation in the perivascular sheaths of the carotid venous plexus as well as in those veins which pass directly from the tympanic cavity to the membranes.

However, it is difficult to prove that a slight meningitis does not occur in these cases. The writer has observed blurring of the disc in suppurative otitis, but it was always in long-standing cases. This would suggest the possibility of erosion through the bone and consequent meningeal irritation. Optic neuritis is a frequent occurrence in brain abscess of otitic origin, especially in the later stages and in those of considerable size; it may not be present in abscess with a short course or in very small abscesses with a short period of inflammation.

Optic neuritis is of frequent occurrence in otogenic mening-

*Read at the Academy of Medicine, Toronto, January 20th, 1910.

itis: it is usually not observed or only slightly marked in uncomplicated sinus thrombosis. It is sometimes found with extra dural abscess.

J. D. Richards has observed papillitis in three cases of extra dural abscess, in all of which it was on the affected side. In sinus thrombosis he places the percentage in the neighborhood of five, and observes that in his experience neuritis is most frequently seen in jugular thrombosis.

In cavernous sinus thrombosis, due to the passage of infection from the middle ear by the carotid canal, or by infective thrombosis of the superior petrosal vein, oedema about brow and orbit, exophthalmos, paralysis of extra ocular muscles, oedema of the lids, chemosis of conjunctiva, and choked disc on the side of the chronic aural suppuration, are seen. Oedema of the eyelids has been reported as occurring as the result of extensive involvement of the zygomatic cells.

It is generally agreed that nerve changes associated with aural disease mean the extension of the aural lesion into the interior of the skull, and it is doubtful if simple uncomplicated suppuration of the tympanum does produce any change in the optic disc.

Nystagmus occurs as a reflex from irritation or disease of the semi-circular canals, and is manifested by horizontal or rotatory oscillations of the globe, depending on the extent of the canal system involved.

It has been shown that movement of the endolymph from the convexity of the right horizontal semi-circular canal to its ampulla caused horizontal nystagmus to the right, while movement of the fluid in the opposite direction produced nystagmus to the left. Similar experiments carried out on the vertical canals produced nystagmus corresponding to their direction. Vestibular nystagmus is characterized by two movements: a slow deviation in one direction—the slow phase—followed by a quick movement in the opposite direction—the quick phase.

These movements Barany was able to produce by injecting cold or hot water into the external auditory meatus or by rotating the subject on a revolving stool. When the vestibular apparatus is destroyed or the vestibular nerve is paralyzed no nystagmus follows the syringing.

Nystagmus may also be produced by condensation or rarefaction of air in the meatus, but this is obtainable only when there is a fistulous communication with the labyrinth. Labyrinthine disease is manifested by nystagmus of a spontaneous character, and is due to the upsetting of the normal balance of

power between the two sides. The stimuli from the diseased side being suddenly withdrawn and those from the healthy side predominating, so that the nystagmus is notatory and horizontal and towards the sound side.

The spontaneous nystagmus of infective labyrinthitis passes through three stages:—

- (1) A short and transitory stage of irritation, with nystagmus to the affected side.
- (2) The stage of destruction with nystagmus to the sound side.
- (3) The stage of disappearance of spontaneous nystagmus.

DENTAL HYGIENE AND ITS RELATION TO HEALTH.*

BY RICHARD G. McLAUGHLIN, D.D.S.

Ladies and Gentlemen,—I esteem it a privilege to have this opportunity of addressing you on a subject of such importance and so far-reaching in its effects as the one forming the title of this paper. The teaching profession and the dental profession, although seemingly far separated in their lines of work, after all, are aiming at a common goal, namely: the fitting of men and women physically and mentally to do the best work of which they are capable throughout life. Just how much the physical and mental efficiency of an individual depends upon the condition of his teeth and mouth is the subject under discussion in this paper, and in placing this matter before you I shall endeavor as far as possible to avoid the use of terms that are of a technical nature.

The close relation existing between physical health and mental activity was never more emphasized than to-day. In order that a man may be at his best and fit to do his best work every organ in the body must be perfectly healthy, and so able to perform its natural functions. Each organ in this wonderful human machine is dependent to a greater or less extent for its health, its power and its efficiency on every other organ in the same body. For example, a dyspeptic can never be the strong man, mentally, physically, socially or morally, that he would have been had his stomach been in a normal condition. It has been stated that Napoleon lost the battle of Waterloo because of over-indulgence that morning in his favorite dish of fried potatoes. Investigation has disclosed the fact that when the mummy of Rameses II., known in history as the Pharaoh of oppression, was examined, it was clearly manifest that that tyrant ruler must have suffered greatly because of decayed and diseased teeth. Medical science is inclined to attribute much of his cruelty to this fact. Be this as it may, the important point is that modern scientific research and observation have proven undoubtedly that many of the ills of the human race, both physical and mental, can be traced directly to an unclean and diseased oral cavity. Nor are we surprised at such a conclusion when we consider the fact that the mouth is the gateway or vestibule to the whole body. Through it must pass the food, and

*Read before the Ontario Educational Association, March 30th, 1910.

in many cases the oxygen, that goes to nourish and build up the body.

There are few outside the medical and dental professions who know what a complex network of nerves and blood vessels run out from the teeth and jaws. These nerves which are intimately related to the brain act and react upon the whole nervous system. It must follow that any disturbances or derangements of the nerves of the teeth produce a sympathetic derangement in the higher nerve centres, and so not only the physical organs, such as the kidneys, liver and stomach suffer, but the intellectual faculties as well. The common idea that a violent toothache is the ultimate penalty nature will exact for neglected and decayed teeth is one of those delusions which recent research has swept completely away. Holding, as they do, such a strategic position at the entrance to the alimentary canal and respiratory apparatus, and so intimately connected with the nervous system, the teeth truly dominate the whole organism of man.

The functions of the teeth may be considered as three-fold: to give contour and expression to the face, to assist in articulation, and to masticate the food. It is with the function of mastication that we are particularly interested at this time. This is the first step, and in the case of some of our food, the important step in the process of digestion. Food to be properly masticated and prepared for the fluids of the stomach must not only be crushed and ground into small particles by the teeth, but what is just as important, should be held and worked in the mouth long enough to be thoroughly mixed with the saliva. Especially is this so with such common every-day foods as bread and potatoes, which contain a considerable amount of starch. Now, starch is an element of food that requires saliva in abundance for its proper digestion. Saliva has the property of converting it into glucose or sugar, and as such it forms a large part of our nourishment. Now, the point is this: if in the mouth this first important step in digestion is to be properly performed, so that the stomach be not unduly burdened, how urgent it is that the teeth be in good, sound condition, free from any soreness, and properly articulated. Bolted food, or food not properly prepared by the teeth and saliva, is looked upon to-day by the medical profession as the direct cause of a large percentage of stomach troubles. Dr. William R. Woodbury, of Boston, Mass., is the authority for the statement that eighty per cent. of the cancers of the stomach are due to bolted food. If day after day and week after week a quantity of food, not properly prepared, be taken into the stomach, that organ will, no doubt, in time rebel, and we

have indigestion, dyspepsia, and the whole train of troubles that naturally follow.

Let us look for a moment why so much of our food is only partially prepared in the mouth before passing into the stomach. As one writer very tersely puts it, "man eats along the lines of least resistance," which, interpreted, simply means if a tooth on one side of the jaw is decayed and sore, he will not make use of that side of the mouth to masticate his food. Now, if he is still neglectful, and one or two teeth on the other side become troublesome, he will not use that side either, and so the food is merely rolled round with the tongue and cheek for a moment or so and then bolted. With this badly prepared food the stomach and other digestive organs must do the best they can. The result is a two-fold injury: first, the body is robbed of part of the nourishment it should have extracted from that food, and, second, the eliminating organs, such as the kidneys, are over-taxed to rid the body of the extra poison consequent upon faulty digestion. Again, not only does this half-hearted mastication result in serious complications to the general system, but is injurious to the teeth themselves. This soft food being merely rolled round by means of the tongue and lips, naturally leaves the teeth coated with a film of the mass, making a splendid resting-place for the work and growth of micro-organisms which promote further decay of the tooth structure.

As long as we persist in tickling our palates with sloppy foods, jellies, angel cakes, and the so-called pre-digested foods, we must make up our minds to have poor teeth and weak stomachs.

If we examine the skulls of the primitive inhabitants of this land, we will find, generally speaking, a well-developed muscular jaw with a full contingent of fairly sound teeth, set in a firm socket of bony tissue. The question arises: Why does not man to-day possess such an enviable masticatory apparatus? The answer is a simple one. Our jaws, teeth and muscles of mastication have deteriorated for want of use. The food of the savage was of such a character as to require vigorous mastication before it could be comfortably swallowed; dried or partially cooked meat and hard, coarse bread or cake. To masticate such food would not only build up strong, healthy teeth and jaws, but the constant rubbing of this hard food over the teeth during the process of mastication would help to keep them free from all accumulation, and so cleanse the teeth as to prevent decay. The important point to be remembered is simply this: If we would have better teeth and better digestion, then we must see to it that at least

a portion of the food of each meal is of such a character as to require considerable mastication, and that all our food is thoroughly masticated before it is allowed to pass into the stomach.

Mr. Horace Fletcher is to-day making strong claims as to the value of thorough mastication in the prevention and cure of many general diseases. His own personal experience in this matter, added to the testimony of many others since that time, gives considerable weight to his system of dieting. If you have not read Fletcher on this subject, I think it would be quite worth while. His doctrine is sound through and through, that the man who does not properly use his teeth is sinning grievously against both body and brain.

But the evils which follow imperfect mastication are by no means the only ones arising from decayed and diseased teeth. The mouth that contains many such disabled molars presents an ideal harbor and breeding-place for germ life. Here we have the necessary moisture, heat and undisturbed food in the cavities and round the necks of loose and sore teeth to give the micro-organisms every opportunity to flourish and get in their deadly work. Moreover, the infectious matter thrown off by decayed teeth is of a particularly virulent character, as it is similar to that of diseased bone. The medical profession to-day is almost unanimous in its opinion that many of the infectious diseases of the body can be traced directly to a diseased and unsanitary mouth. When we understand the many dangers lurking in unclean and ill-kept mouths, we do not wonder at this conclusion. That many species of the most poisonous germs are to be found lurking in decayed teeth has been fully demonstrated by Miller and other bacteriologists.

This continual swallowing of these germs and decayed matter from diseased teeth and foul roots carries disease to every part of the body. Dr. William Hunter, of Charing Cross Hospital, London, states that his observation and experience has proven that such local diseases as tonsillitis, pharyngitis and inflammatory condition in that region can frequently be traced to a septic condition of the teeth and mouth. Also a hollow tooth having a dead pulp has been the means of conveying the germ of tuberculosis to the lymphatic glands of the neck, resulting in tubercular abscesses. In the fight against this dread disease, "The White Plague," it is most important that the teeth should be sound, properly arranged for good mastication, and well kept.

Again, to go a little farther from the region of the mouth, we find that the constant swallowing of the septic matter arising

from decayed teeth is a direct cause of disturbance and diseases of the deeper digestive organs. It is true that the gastric juice of the stomach will in its normal condition take care of much of this foul matter and those pus organisms from decayed teeth and foul abscesses; but we must remember in most cases the supply is constant and by degrees the tone and resisting power of the gastric juice is lowered—becomes, in fact, gradually infected—and so fails in the performance of its digestive function. This results in indigestion, dyspepsia, constipation, ulceration of the stomach, septic catarrh, and all the evils arising from a disabled and diseased digestive apparatus.

In the great majority of these stomach troubles the physician to-day is looking to the mouth of the patient both for the cause and the cure. Drugs can be of no avail till the teeth are put in a sound and sanitary condition. Many cases are on record which fully demonstrate the force of this statement. Let me mention one or two which have come under my own observation:

Case 1. A young lady had for some three or four years been suffering from ulceration of the stomach. Her condition was gradually becoming more serious, she became weaker, and was under the constant care of her physician. Upon examining her mouth I found her lower back teeth were all so decayed that nothing remained but rotten and diseased roots. These were so sore and the gums so inflamed that no attempt was made at proper methods of cleansing. Here, I felt satisfied, was a source of serious infection. The patient was physically so weak that the operation of extraction was attended with considerable risk. However, the diseased roots were in time all removed, an antiseptic mouth was prescribed, and as soon as possible the patient supplied with artificial teeth for the work of mastication. It was quite noticeable that as soon as the mouth was put in a healthy condition the patient showed signs of improvement, and inside of twelve months was about her duties as usual. Since that time, which was some years ago, there has been no signs of recurrence.

Case 2. A little girl between five and six was brought to the office suffering from toothache. For a child of her age, she presented a decidedly emaciated appearance. It was clearly a case of poisoning of the system from some source. She had the ashy-grey color, and even at that age was a sufferer from indigestion. Upon examining her mouth I found all her back teeth were more or less decayed, some with exposed nerves or pulps, and also five or six abscesses, from which pus was continually oozing into the mouth, and, of course, taken into the stomach

with every mouthful of food. Was it any wonder the child was a dyspeptic, in general bad health, and unfit for her school duties? It took some weeks to restore that mouth to even a fair condition; but as soon as the foul matter and pus was gotten rid of and the child could again masticate her food with comfort, her health and spirits began to return.

If time and space permitted, many similar cases could be cited of the general health being undermined by infection from an unclean mouth.

Apart from these local effects or digestive disturbances which so frequently result from decayed teeth, there is always a danger of these pus organisms and this foul matter from the mouth being absorbed into the blood itself, and if allowed to continue will gradually lower the vitality and resisting power of the whole body. In such cases there may be no definite local manifestation of the deadly process, but there is, as Dr. Hunter states: "The dirty ashy-grey look and general languor, irritability, feelings of intense depression, which are constantly found associated with those cases of oral sepsis, sometimes of the profoundest character." Thus the same authority states that many cases of pernicious anemia, profound septicemia, and serious nervous disturbances coming under his own observation have been traced to a constant infection arising from a foul and diseased mouth.

Now, if, as we have concluded, a diseased and unsanitary condition of the mouth is so far-reaching in its effects as to upset the whole human machinery, what effect must it have on the physical and educational progress of the boys in our schools? Simply this: that a boy who has bad teeth is handicapped both physically and mentally. No doubt, one of the difficult questions you have before you at this Convention is that of the backward pupil we find in every school. The educational world is just awakening to the importance of subjecting these laggards to a rigid medical and dental examination. The educational board of Toronto has gathered 117 of these laggards and appointed a medical practitioner to report on the physical condition of each. It is possible that a dentist will also be asked to examine the mouths and teeth of these children, and it is safe to predict that a large percentage will be found to be "Dental Cripples."

In educational circles to-day, it is generally conceded that the backwardness found in many of the school children is due largely to some physical defect. In many of the large cities of the United States this matter has been taken up with a good deal of vigor. The children in many of the schools in New

York, Boston, Philadelphia, and Chicago have been subjected to a close medical examination, not only as to their general health, but as to the condition of their teeth and mouth. As a result, it has been found that from 67 per cent. to 98 per cent. of the children in different schools have decayed or defective teeth.

Dr. William A. Evans, Commissioner of Health for the City of Chicago, stated in a recent public utterance that as a result of a medical examination of the school children of that city 44,000 were found to have defective teeth. In other countries, such as Germany, England, France, where the matter has been investigated, the same lamentable condition prevails. Now, the serious point is this, that if the percentage of children in our schools having defective teeth runs up as high as 98, we could naturally conclude that fully 50 per cent. would present mouths in such a serious condition as to affect their physical development and educational progress. Observation has also shown that children whose mouths are unclean and diseased to such an extent as to affect the nervous mechanism are not so amenable to school discipline; in fact, many become not only ungovernable, but actually criminal. Now, such a child is not having a fair chance. It is no fault of his that he carries this handicap. He may have as much native ability and good nature as the boy next to him. We must conclude that those responsible for that boy's education and future are not giving him a square deal. The parents, the municipality and the school authorities, who are the responsible parties, should see to it that no boy or girl in our school is allowed to labor under such a serious handicap.

Germany perhaps leads the world in looking strictly after the health of her children in the schools. For years she has insisted that pupils undergo periodical examination of their teeth and present a certificate, either from the family dentist or the public clinic, that their teeth are in good condition, and as a result there has been a marked improvement in the health, scholarship, morals and discipline of the school children. Germany has proven for the whole world that such oversight and assistance has been a wise investment. She has fewer laggards in her schools, fewer in the hospitals, better discipline, and all resulting in a higher class of citizens.

Let me give you just one illustration in support of what I have been placing before you; a case from the Children's Aid Society of New York. I quote this from an article written by Dr. J. O. McCall, of Buffalo. A young girl of 11 years appeared almost incorrigible and wholly unmanageable in school. Upon investigation it was found she had only two sound teeth in her

mouth, all the others being badly diseased. She was at once sent to the dental clinic established for these children, and her teeth put in good condition. At once there was noticed a marked improvement in her physical health, her studies and her deportment. That same pupil was afterwards referred to by the teacher as the model pupil in the school.

Now, if, as has been shown, such a large percentage of our school population are suffering to a greater or less extent from such a serious handicap, we ought to, and we must, ask ourselves—what is the remedy and who are responsible for its application?

First: The children in our schools must be regularly instructed in the importance of having good teeth, and how to properly take care of them. To be capable of imparting such instruction the teacher must know more, vastly more, about the teeth, their structure, their functions, their diseases and their proper care than she is expected to know to-day. This would mean a full course of instruction on dental hygiene and in the Normal Schools of the Province. I can assure you that the dental profession will be only too glad to assist the teaching profession in such a course of instruction. Already in many of these normal schools some little attempt has been made towards such a course.

Second: Periodical inspection of school children's teeth by dentists should be insisted upon by the school authorities. This is already being carried out to good advantage in many large centres. In the municipality of Strassburg, Germany, every child on coming to school is compelled by a city ordinance to present to the teacher a certificate from a physician and dentist, giving information as to the general health and condition of his teeth. If the child needs medical or dental attention he is sent to the regular practitioner or the infirmary, which is supported by the municipality. The German Government, in pursuing this course, keeps the children in good physical condition, and well equipped for school work.

Austria, France, Switzerland, England and Australia have also in recent years been paying special attention to dental and oral hygiene in relation to school children. The United States is now turning itself with a good deal of vigor to the solution of this problem. Professor Witmer, of the Department of Psychology at the University of Pennsylvania, has been making a special study of the causes of intellectual backwardness in school children. He reports that a large number of these laggards present mouths and teeth so defective and diseased as to be

wholly incapable of performing the work nature had intended them to do.

Also, let me state here that I believe in the Board of Education of Toronto a movement is now under discussion to appoint both a physician and dentist, whose duties shall be to make periodical inspections of the school children as to the condition of their general health and teeth.

Third: In large centres of population dental clinics supported by the municipality should be established to look after the teeth of those children whose parents are not financially able to pay the regular fees of the family dentist. By this means the child of the poor man may have an even chance with the child of the rich. Many of our larger cities are already looking after the poor children in this respect. In 1908 Cleveland paid for the care of the teeth of 1,500 school children. The services of the dentist being given free. Other American cities, as Rochester and New York, are doing similar work.

The city of Strassburg, to which I referred before, has a dental infirmary in connection with her schools, established since 1902. This clinic is now conducted in a special building erected for the purpose at a cost of \$60,000. And Germany finds that it pays. It helps materially to produce a better class of citizens. And a nation's best assets are her men and women, well developed physically, mentally and morally.

If this much-needed reform is to be accomplished in this good land of ours; if our school children are to be relieved of this serious handicap, it must be done by the hearty co-operation of the teaching profession, the dental profession and the municipality. And I can assure you that in all or any part of this work you may rely upon the support of the dental profession of this Province.

Selected Articles.

REMARKS UPON THE TREATMENT OF HYSTERIA WITH SPECIAL REFERENCE TO THE REST CURE

BY EDWIN BRAMWELL, M.B., F.R.C.P., Ed. and Lond.

Assistant Physician to the Edinburgh Royal Infirmary.

The writer has endeavored in the present communication to commit to paper some of the lessons in the management of cases of hysteria which he has himself learned from practical experience. No attempt has been made to treat the subject exhaustively, nor does he claim that the conclusions arrived at are in any way original, when he states that the convictions expressed have been driven home by personal observations, for there are many things we think we know, the true significance of which experience alone teaches us to correctly appreciate and value. It may be that in the following pages in which the modern conception of the Rest cure is more particularly dealt with, that the reader will acquire something of use to him in practice.

Hysteria may be defined as a disease of psychical origin which is curable by psychical methods. An instance, in which hysterical symptoms were induced by a sudden mental shock, was that of a bailiff who unexpectedly came across two poachers one night in a dark wood. He stated that upon raising his right arm to strike one of the men it fell powerless by his side. Upon examination a few days later he was found to have a typical hysterical hemiplegia, with the characteristic loss of sensation, affection of the special senses, and aphonia met with in this disease. An example of the sudden cure of hysterical manifestations as a result of profound emotion, a veritable faith cure, was that of a man who for months had been unable to speak. Sent from a distant part of the country for treatment, immediately he entered the hospital he recovered his voice.

The practice of hypnotic suggestion in the treatment of hysteria at one time so much in vogue, especially in France, has been almost universally discarded for several reasons. Firstly, these cases, if properly treated, can be almost always cured by other means. Secondly, the curative effect of hypnotic suggestion is too often only temporary, repetition being demanded at shorter periods after each relapse. While, lastly, if recovery is so induced and relapses occur, other methods of treatment are usually ineffective.

Suggestion and persuasion, the latter implying an appeal to the patient's reason and her Will during the conscious state, are the psycho-therapeutic measures which are now employed. Should it happen that the term psycho-therapy conjures up in the minds of some nebulous images of complex psychological problems, the appreciation of which is necessary for the practical application of the method, this paper may at least prove of service in dispelling such an erroneous impression.

Although it is not my present purpose to discuss the many difficulties which may arise in the recognition and differential diagnosis of hysteria, yet it is of interest in passing to note the more important groups of cases in which uncertainty may exist. Grave organic disease of the nervous system is very apt to be mistaken for hysteria, when, in the absence of pathognomonic signs, its onset, on the one hand, happens to coincide with a pronounced mental shock, or, on the other, when its symptoms disappear for the time being. The case of a boy who ultimately died with symptoms indicative of an intracranial tumor, the first manifestations of which were noticed two days after the fall of a chimney through the roof of his bedroom, is a remarkable instance of the former, while illustrations of the second group of cases are of every-day occurrence in that protean disease disseminated sclerosis, in the earlier stages of which transient amblyopia, fleeting paralysis of a limb, and other temporary phenomena are of such common occurrence. Again, hysteria may closely simulate organic disease. This is notably so in cases of long duration in which contractures and muscular wasting have developed. A patient, seen by the writer, who had been for upwards of two years in an incurable home and whose symptoms—those of a complete paraplegia—yielded to the measures about to be described, affords a striking example in point. This case, too, illustrates a group in which the diagnosis is especially difficult, for there was good reason for believing that the patient had originally actually suffered from organic disease, peripheral neuritis, the symptoms of which had been replaced by an hysterical paralysis depending upon the "fixed idea" that she was unable to move her limbs. Lastly, and equally difficult, are those cases in which symptoms due to structural disease are associated in the same individual with the manifestations of hysteria. A case which falls under this category was that of a young woman examined by the writer several years ago. She was suffering from aphonia and hemianæsthesia of the hysterical type associated with a peculiarity of gait so remarkable in its features that it was only to be explained by

its dependence upon a psychical cause. The patient's case had been demonstrated as one of hysteria, and in the presence of a bilateral extensor response the conclusion had been arrived at that the latter sign could not be regarded of distinctive value in differentiating between organic and functional disease. Examination revealed that there were also present nystagmus and relative pallor of one optic disc. The hysterical symptoms above referred to disappeared and the patient left the hospital to all appearances cured. Some months later, however, she was admitted to another ward with characteristic symptoms of disseminated sclerosis, a diagnosis which the writer had an opportunity of verifying post-mortem at a subsequent date.

Even in the presence of undoubted hysterical symptoms, the necessity for a most thorough examination with the object of definitely excluding co-existing organic disease will be appreciated from the foregoing remarks. The importance of a correct and complete diagnosis cannot be too forcibly emphasized, for upon the physician's confidence in his diagnosis success in the treatment of hysteria is very largely dependent.

From what has been said it will be seen that an exhaustive examination should be conducted in every case before any opinion is expressed as to the nature of the condition and the proposed line of treatment decided upon. Not only is a complete physical examination to be carried out, but, in addition, a minute inquiry is to be undertaken into the patient's whole mode of life, more especially with regard to any mental factor which may have originated or be the means of maintaining the existing symptoms. Lastly, the opinions which have been expressed to the patient by other medical men must be as far as possible ascertained, together with the treatment which she has undergone. A complete examination is also of great value from another point of view, particularly when, as so often happens in this disease, the patient has previously consulted other physicians; for by such an examination, which omits none of the methods of diagnosis commonly employed in these cases, the patient is impressed by the physician's familiarity with her disease. The physician has thus a great opportunity of acquiring the confidence of his patient, a factor which is essential in the subsequent successful treatment of the case. Needless to say, the examination is to be conducted in such a way as to avoid suggesting possible symptoms to the patient. The necessity for such precautions will be realized, when it is remembered that some of the leading exponents of the modern Paris School hold that the symptoms of hysteria are the product of the physician.

After satisfying himself that the patient is suffering from hysteria and that there is no organic disease of the nervous system, the physician then expresses his opinion to the patient. The way in which he does so is important. It is not sufficient for him to say that he cannot detect any evidence of actual disease, for such a statement implies its possible existence. Dogmatism is essential, and dogmatism rarely carries conviction with it unless it is coupled with conviction. The patient is to be told that he, the physician, after making a very thorough examination, is absolutely satisfied that there is no structural disease of the nervous system, and that he is not only certain that her condition is curable, but that he can cure it. The physician's assurance as to his ability to cure the patient will carry conviction with it in proportion to his experience and confidence in dealing with cases of the kind.

Very much depends upon the attitude which the physician adopts towards the patient. It is to be remembered that hysterical patients are commonly selfish and self-centred, and that one of the traits of the hysterical mental state is an abnormal craving for sympathy. The physician must adopt a sympathetic attitude towards the patient, and show her he recognizes that she is suffering from a definite disease. The term hysteria should never be employed in her presence, for it is commonly regarded by the laity as synonymous with malingering. Functional disease is the equivalent expression which is to be employed, since its use implies no such erroneous interpretation. Although devoid of precise etiological meaning, it is nevertheless a term which, in the present position of our knowledge, is indispensable. How long it will be before hysteria and malingering are disassociated in the lay mind it is difficult to say, when among nurses and even among medical men they are so often regarded as synonymous. Particularly difficult to deal with, on the other hand, are those cases of chronic hysteria which for years have been waited on hand and foot by their relatives who are ready to gratify their every wish. So satisfied may such a patient be with her existing state that it may be very hard to inculcate in her the desire for recovery, which is the first step requisite in its attainment. The attendant physician is often largely to blame for this state of affairs; it is too often his fault that the patient has become a kind of mollusc. He visits her, it may be, twice a week or oftener, quite pleased so long as she and her relatives are satisfied with his attention, and failing to realize that decisive steps are demanded if she is to be saved from life-long invalidism. An active desire to get

well is indeed the state of mind which is, in the first instance, imperative. Demonstrations of the truth of this assertion are of everyday occurrence in the case of patients suffering from traumatic hysteria who are appealing for compensation. No doubt the attendant worry and, it may be, the prospect of impending litigation retard the patient's progress, but it is beyond question, in the writer's opinion, that the absence of a strong desire for recovery is the main factor which delays improvement in these cases in which recovery is often comparatively rapid after a settlement has been arrived at.

When the physician informs the patient that she is not suffering from structural but from functional disease, she may reply, "Several doctors have told me this before, but what have they done to cure me?" In such cases personal conviction impressed upon the patient by the physician that he not only can cure her, but that he is determined that she shall be cured, may serve to convince her of the truth of his assertion.

A delicate question arises if it happens that the physician in the course of his examination detects evidence of some visceral disease. If, for instance, he finds that the patient has mitral stenosis which, it may be, has given rise to no symptoms, what is he to say to the patient? The cardiac lesion is obviously a concurrent affection in no way related to the hysterical symptoms. This being so, is it advisable to refer to it before the patient? At first sight such a course may seem injudicious, but it is to be remembered that the patient may already be aware of the condition, even though she has given no hint that this is so. If this happens to be the case, and the physician does not mention its existence, she may conclude either that he has failed to recognize it and is therefore incompetent, or, on the other hand, that he has noted it but is keeping the information to himself. In either instance he runs a great risk of losing her confidence. It is better by far to be perfectly frank and to tell the patient of the disease he has discovered, explaining to her at the same time that it is in no way associated with her present illness.

The minor forms of hysteria may often be greatly benefited by a few kindly words of advice and encouragement and precise directions as to the daily routine, which will be dictated by common-sense according to the particular circumstances of the individual case. This may be all that is necessary, if it so happens that the patient lives with sensible relatives, who recognize that neither a too rigorous nor too sympathetic attitude is to be adopted towards her, and who at the same time can be depended upon to carry out the instructions of the physician.

When the symptoms are pronounced, and particularly when they are of long-standing, the physician should at once take up a firm position and insist upon a "rest cure," either in a nursing home or hospital ward; for, as Dejerine has shown, these cases do quite as well when treated "behind screens" in a hospital ward as in a private institution. To attempt half-measures and treat the patient in her own home is to court failure. The physician should clearly explain that it will be necessary to treat her for a period of some weeks, during which time she will not be allowed to see her relatives or friends nor be permitted to write or receive letters, while milk will form her staple article of diet. At the same time, she should be informed that her relatives will hear regularly from the nurse or physician as to her progress; and that during this period of confinement, in the event of anything happening in connection with her family affairs which it is important that she shall know, it shall be made known to her. Experience has shown that it is inadvisable to hazard an opinion as to the exact period during which she will be kept in isolation; for while in some cases one month is sufficient, in others three months are necessary in order to effect a cure. Treatment by isolation should only be undertaken after all these points have been clearly explained to the patient, and she has assured the physician that she is willing to submit to his injunctions in full detail and with the co-operation on her part which is required.

Isolation, although now rightly regarded as no more than an adjuvant in the treatment of hysteria, in that it permits of the application of psycho-therapeutics under the most advantageous circumstances, is none the less essential. The patient is thereby removed from the surroundings at home which often play such a prominent rôle in inducing and maintaining her symptoms. Her environment is entirely novel, and all about her tends to give an impression of quiet confidence as to the ultimate result of treatment. The physician has summed up his mental attitude towards the patient, and he has the satisfaction of knowing that she is, for the time being, under his complete control, and that he is thus enabled to instil new impressions into her mind without fear that they will be contradicted or annulled; for he may rest assured that, once he has gained her confidence, she will spend considerable periods of her day thinking over the expressions of opinion to which he has committed himself regarding her condition and progress. The importance of this will be recognized when it is remembered that a prominent characteristic of the hysterical mind is indecision.

These patients are ever ready to be influenced by the last speaker, and constant reiteration is necessary in order to fix impressions which have been made.

The patient is, in the first instance, to be placed in a cheery and quiet room and kept at rest in bed, where she is to remain for several weeks. The choice of a suitable nurse is, as all will agree who have had much to do with these cases, of vital importance, for without a doubt the results of treatment are largely dependent upon her influence. To suppose that any nurse with a good training possesses the qualities required for successfully dealing with cases of this class is altogether a mistake. Indeed, these qualities are rarely met with in combination. The nurse should be of a bright, kindly, sympathetic and sanguine disposition, possessed at the same time of tact and with a firm and decisive manner, added to which a sense of humor will be found to be a valuable accessory. The beneficial influence of a nurse who has had experience in nursing cases of this class, and who in addition possesses the above-mentioned qualities cannot be overestimated. Absolute loyalty to the physician is essential. The nurse's duty is to reiterate the statements of the physician as discretion suggests, to enhance thereby the intensity of the impression he has created, and to cheer up the patient when occasion demands. Above all, she is to avoid questioning the patient as to her symptoms and discussing their possible cause.

Diet is of importance. In the first instance, it is advisable to give the patient milk alone. For the first week, 3 pints in the twenty-four hours (6 or 8 ounces to be taken every two hours) is sufficient. Patients sometimes say that they are unable to take milk, but this will almost invariably be found to be an impression which can be overcome. The quantity is to be increased to 4 pints during the second week. In cases in which there has been much loss of weight, the amount of milk taken may be gradually augmented to 8 or 10 pints in the day. The tongue is to be closely watched and the amount of milk reduced on the first appearance of any gastric disturbance. The rapidity with which these patients put on weight is sometimes extraordinary. A patient, under the impression that she had cancer of the stomach, who was treated by the writer, increased in weight in the course of eleven weeks from 6 st. 7 lbs., at the commencement of the treatment, to 11 st. 4 lbs., this being her normal weight prior to her illness. One great advantage of commencing with milk alone is the moral and disciplinary effect. A more generous diet may be gradually added as the patient improves.

Drugs are unnecessary, unless it be in the treatment of symptoms such as anæmia, constipation, etc., which may happen to co-exist and demand attention. It is advisable, however, in the majority of cases to give some medicine because of the mental effect which it produces, for patients, more especially those who belong to the uneducated classes, are apt to think nothing is being done for them unless they are taking medicine. Asafœtida and valerian are from their unpleasant taste sometimes efficacious. The first night after admission either to a home or hospital ward, patients rarely sleep well, and it may be that a sleeping draught is advisable; unless, however, the patient has been in the habit of taking drugs at night to make her sleep it is far better from the commencement to avoid their use. A glass of hot milk in the evening may send her to sleep, and, if this is not sufficient, massage, to which reference will afterwards be made, if carried out late in the day will often induce it. When, in the later stages of the treatment, the patient complains that she is not sleeping so well as she would like, it should be pointed out to her that she cannot expect to sleep so well as if she were taking regular exercise, and that after her discharge she will no doubt find that she is sleeping quite well.

The treatment of the various subjective symptoms of which these patients complain by drugs and local applications is to be avoided, since attention is thereby directed to their existence and their presence emphasized.

Massage is necessary since it keeps the muscles in condition, taking the place of exercise. It should be carried out, if possible, by an experienced masseuse. "General massage" may be ordered for half an hour daily, and, if the patient is not sleeping well, the evening is the best time.

Faradism, although not essential, may be employed, and is of value for the same purpose as massage.

After one very thorough examination it is unnecessary and indeed inadvisable to repeat this at subsequent visits, for such a procedure, and particularly an inquiry as to symptoms, is apt to reinforce their existence in the mind of the patient. By far the wisest course is to allow the patient to make her statement and to ask no questions as to subjective complaints, but to concentrate the attention upon any admitted alleviation of symptoms ascertained from the nurse or volunteered by the patient, and upon objective evidence of physical improvement which the physician himself is able to verify. If, for instance, the patient complains that pain in the head is worse than it was on his previous visit, the physician cannot deny that this is so.

When patients complain that the time hangs heavily, they may be permitted after a few days to read some light literature, to knit, crochet or do some needlework which calls for no special effort, or to play patience.

The major symptoms of hysteria (paralysis, etc.) are dependent upon a fixed idea, and their successful treatment depends upon the physician's ability to persuade the patient that this fixed idea is groundless. Sometimes this is easy, in other cases most difficult to effect. Particularly difficult is it when previous treatment has been directed to some organ, to disease of which the symptoms have been referred. This is notably so in connection with the uterus and its appendages. Cases of hysteria in young women who have been treated for pelvic disease are often most intractable. The writer believes he can say with truth that the only case of hysteria which he has had under his personal charge, either in a nursing home or hospital, and which he failed to cure, was a young woman who had undergone a prolonged course of gynecological treatment.

The following is the general line of argument which has to be adopted in answering the patient's inquiries, and which experience will elaborate to meet the exigencies of individual cases:—"The symptoms you present are due to a functional disturbance of the nervous system, and are not dependent upon structural disease. It is well recognized that by the plan of treatment which I am adopting these symptoms are curable. I have met with many cases almost identical with yours and attributable to the same cause, and I am confident from my experience of such cases that by this treatment the general condition of your nervous system will be improved and that your symptoms will consequently disappear." The first point, then, granting that the patient is imbued with the desire to improve, is to make her anticipate improvement.

The second point is to convince the patient that she is improving. Keeping this in view, the physician lays stress upon any alleviation of symptoms which she volunteers or admits. If, for instance, he is able to assure her that the grasp of a paretic hand is stronger than it was, and particularly if he can demonstrate this by means of the dynamometer, he has made an important advance towards cure. In a case of complete paralysis the use of electricity in demonstrating to the patient the ability of the muscles to contract may be valuable. Any increase in weight is another point upon which great emphasis is to be laid, especially if the patient has lost much flesh during the course of her illness. It should be explained to her that this

increase in weight signifies improvement in her general physical condition, and that as her general condition improves this will react upon her nervous system.

When any improvement is observed, some little relaxation in the rigor of treatment is advisable. Thus she may be promised some extension in her diet, or she may be encouraged by being told that if she continues to progress as she has done, she will before long be allowed to see a friend, and so on.

On each occasion the physician should leave his patient satisfied that he has made some new point, that she has admitted to further improvement, or, at any rate, that he has accounted to her satisfaction for any want of improvement there has been since his last visit. When a relapse occurs the cause is to be sought for and brought to light, whether it be some temporary disturbance of digestion, the occurrence of menstruation, or possibly some erroneous impression she has received from some chance expression dropped by the physician or the nurse, this is to be pointed out. It must be explained to her that in cases such as hers improvement is seldom uninterrupted, that from time to time she will experience bad days, but that these will gradually become less frequent, and finally disappear.

A third stage is attained when the patient begins to take pride in her improvement, and to consider the effect that she will produce when she sees her friends.

Isolation is to be strictly maintained until she is practically well, and even after this period, when she is allowed to see one or two friends and permitted to get up, she should still be kept in the home for a fortnight, during the latter week of which she may be sent out at first driving and later walking with a nurse. Every day something more is expected of her. The physician must see to it that once improvement commences there is a gradual but steady progression and no lagging. She is to be discharged only after promising that she will follow the precise directions which he has laid down as to her daily routine, which should be based on the general laws of hygiene and, as far as circumstances will permit, on the ideal of the simple life. Finally, the physician must see to it that she banishes for good any ideas she may have previously entertained as to her inability, on the score of ill-health, to lead a useful existence.—*Clinical Studies.*

Progress of Medical Science.

MEDICINE.

IN CHARGE OF W. H. B. AIKINS, F. A. CLARKSON
AND BREFNEY O'REILLY.

New Horizons in the Pathology and Therapy of Nephritis.

The classification of the forms of nephritis hitherto adopted corresponds neither to the clinical reality nor to the anatomical and pathological observations. The new classification will have as its point of departure the pathogenetic elements which have produced the disease, because such elements constitute its particular physiognomy. The question of the permeability of the kidney in nephritis is of the utmost importance. The nephritic kidney has not entirely lost its power of elimination. Histological examinations have shown that in the diseased kidney, even when it has reached an advanced stage of degeneration, there still exists a considerable quantity of renal elements in good condition. Experimental pathology has also shown that small portions of kidney are sufficient to discharge the purifying function. A long series of observations, repeated during many years, has proved that, generally, the nephritic kidney is permeable to materials both of mineral and organic origin. There may be suspension of the renal function, due to obliteration of the canalicular system or to an inhibitory action of organic nature. But such retention is not permanent, and after the suspension there is an excretion of materials above the normal.

Maragliano insists on the quantity of imperfect materials which pass in nephritic urine; whereas the same materials do not pass when the kidneys are in physiological condition. Such a fact is placed in evidence by the relation between the total azote and the ureic azote in the urine and blood. It is important to know whether or not the kidney is capable of eliminating organic materials; whether it eliminates all that it should physiologically eliminate.

In conclusion, Maragliano claims that the nephritic kidney is generally permeable; that only temporary suspension of the renal function exists; and that in nephritis, the kidney is the exponent of a morbid state of the whole organism. As the clinical conception of the disease has been changed, so must its prognosis be changed, and we must have more faith in the possibility of cure.

Calabrese states that the therapy of nephritis, especially of chronic nephritis, has been greatly changed in the last few years,

by reason of the new light thrown on the physiology of the kidney. The investigations of Von Noorden in Germany and of Maragliano in Italy show that the diet of the nephritic can be varied with benefit and that one can administer foods, such as meat, which were formerly considered hurtful.

A new question has come forward, since the investigations of Achard, Widal, Strauss and their collaborators had shown the important function of chloride of sodium in regulating the changes in the food materials and in producing edema and the helpful influence of chloride-free diet on nephritic edema. The absolute milk diet still retains its importance in acute nephritis, because of the small quantity of chlorides therein contained. But the milk diet must not be kept up beyond three weeks, because it is poor in iron, because it contains in 3 or 4 litres (the amount necessary for the calories) too large a quantity of albuminoids and of fats, few hydrocarbonates and much liquid. Hence it can be replaced to advantage by the mixed milk-vegetable diet. The milk must be increased gradually according to the patient's tolerance. Then one may add lactose and cream, hydrocarbonates and fats, and especially green vegetables, which contain much iron.

In chronic nephritis one must give the maximum of nitrogenous alimentation (compatible with the functional capacity of the kidney) for the maintenance of the equilibrium of the azote; on the average 70 to 80 grammes of albumen. Not all nephritics behave alike, and a strict watch must be kept over the condition of the digestive tract. There is no exception to the rule that we must exclude broths, game, oranges, alcohol (except wine in moderate amount). Fish may be given. In chronic nephritis, especially in the gouty, arthritic forms, one may obtain benefit from the iodides. In the gouty cases one should add alkalines (except chlorides) to the iodides.

De Renzi has observed that albuminuria sometimes remains after the nephritis is cured, without influencing the general condition of the patient.

Among the factors of nephritis, there is one, too often overlooked, namely, mercury. When a large quantity of mercury is administered, without the existence of a real indication for the mercurial treatment, very often a mercurial nephritis is developed. Stomatitis is the macroscopic lesion which should put us on our guard. In the treatment we must use diuretics, in small doses. Later we may be compelled to suspend even these small quantities, in order to avoid more serious renal lesions.—*Papers read at the 19th Congress of the Italian Society of Internal Medicine in Milan. Translated by Harley Smith.*

OBSTETRICS AND GYNECOLOGY.

IN CHARGE OF ADAM H. WRIGHT, K. C. M'ILWRAITH, FRED. FENTON
AND HELEN MACMURCHY.

Technique and Indications for the Vaginal and Cesarean Section.

A. Dührssen (*Gyn. Rund.*, Jahr. II, Heft. 22) gives the technique of the vaginal Cesarean section as follows: The operation is preceded by an injection of ergotin, an incision is then made on the right side of the vagina through the perineum large enough to admit the fist of a full-sized man. The cervix is now grasped with forceps, and the posterior lip split up to the roof of the vagina; by prolonging this incision backward the cul-de-sac of Douglas is opened, and the peritoneum separated from the uterus. The anterior lip and vaginal junction are split in the same way, and the urinary bladder separated in a similar manner; thus the anterior and posterior walls of the body are exposed for a distance of six centimeters, and this is now quickly incised with a pair of scissors; the resulting opening shows the amniotic sac if that has not yet been opened, and the opening must be as large as a man's fist. A hand is pushed into the uterus; the foot of the fetus is grasped, and the child extracted. The indications for this operation are eclampsia, in which better results are obtained by this method than by any other; placenta prævia when the cervix is not widely dilated enough to allow of the use of a rubber balloon and combined version, or when the delay would destroy the life of the child. The author has never seen lesions of the bladder produced by this operation. In cases of danger to the child alone with undilatable cervix the vaginal section is indicated.—*Amer. Jour. of Obst.*

Post-Partum Hemorrhage.

Dr. Douglas Stewart, in a paper on post-partum hemorrhage, deals chiefly with treatment. He gives the following summary in conclusion:—

1. The term post-partum hemorrhage should be applied solely to a flow of blood after delivery, 1,000 c.c. or more in amount, which blanches the lips, produces air hunger, and which gives rise to the pulse symptoms of severe hemorrhage. Other bleedings occurring under similar circumstances are properly named "excess bleeding," "threatened post-partum" or "traumatic hemorrhage," as the case may be.

2. A good precaution is to allow the mother forty-five minutes rest after delivery of the child.

3. A hemorrhage occurring some hours after delivery may be checked by the administration of an ounce of vinegar by the mouth. If this fails a hypodermic injection of the same, into the uterine wall, is an efficient means of meeting the emergency.

4. A Rose bandage will hold the patient safe, after bleeding has been checked.

5. Threatening or actual hemorrhage at the immediate completion of labor may be forestalled or checked by the application of chloroform to the interior of the uterus, without the sticky black gum consequent upon the use of Monsel's solution or other iron preparations for the same purpose.

6. The writer simply desires to add to other more or less valuable means two simple ones which have served him well, so far at least, in dealing with this rare but always possible condition. However, when it does occur it presents a picture which is finely described by Withington of Boston in these words:

"If the bleeding is not stopped the patient dies at once, even in the midst of the gratulations of her friends on the apparently successful completion of her labor."—*Amer. Jour. of Obstetrics.*

Veronal with Vomiting of Pregnancy.

We extract the three following cases from a paper by A. Reich and A. Herzfeld, of New York:

L. B., primipara, 23 years old, suffering from hysterolepilepsy, for which she was treated with the bromides. Severe vomiting set in during the sixth week of pregnancy, which persisted for two weeks before the first dose of 4 grn. of veronal in hot water was given. The patient took 15 grn. daily for two days. The vomiting ceased and did not recur during the pregnancy.

E. W., 27 years old, 2-para. The patient was formerly a teacher, and was always well, but very excitable and "nervous." Soon after conception there was frequent and severe vomiting. All kinds of drugs were tried. After 2 grn. of veronal three times a day, in hot water, the emesis was checked immediately, and did not recur throughout the entire pregnancy.

H. A., primipara, 35 years old, and the sister of above patient. Soon after conception frequent and severe vomiting set in, which was checked, after the second day, by 2 grn. of veronal every three hours, in hot water. There was no recurrence up to term.

Pelvic Haematocele and Haemorrhages Independent of Ectopic Pregnancy.

Tartanson (*Thèse de Lyon*, July, 1909) has collected 32 cases of this condition, so important both for medical and for medico-legal reasons, adding cases reported since de Rouville's series, Stein's monograph on fatal haemorrhage from uterine fibroids were published, and Jayle's monograph on haematocele caused by the rupture of haematic cysts of the ovary. Tartanson includes twelve examples of haemorrhage from lesions of the ovary, excluding big cysts, as well as ovarian gestation. One case was under his own observation; the patient was a single woman, aged 30, apparently a virgin. She was engaged to be married, and, had sudden death occurred, the question of pregnancy might have come before a court of law. She declared that she had been perfectly regular. A violent attack of abdominal pain set in one night a fortnight after the last period, coming on in spasms, without vomiting or signs of haemorrhage. She was sent into hospital, when it was noted that the abdomen was distended and a firm tumor occupied the hypogastrium. Tenderness was marked, and the patient felt much pain without appearing anaemic. A uterine fibroid was definable, but doughy swelling was detected in the vaginal fornices and fluctuation in Douglas's pouch. Albertin operated, and found a large collection of blood behind the omentum and uterus. The blood did not proceed from the omentum, which was infiltrated with clot, nor from the uterus, which bore a small fibromyoma. It was traced to a haematic cyst of the right ovary. The left was the seat of a similar cyst, as big as a small Tangerine orange, thin-walled, but unruptured; it contained almost pure blood. The cyst in the right ovary had ruptured, and the haemorrhage had proceeded from it. The ovaries were examined, and a series of sections of both cyst walls prepared. No trace of any products of conception could be found; not a single chorionic villus. The uterus, bearing a fibroid as big as a foetal head, was removed with the appendages, and convalescence was uncomplicated.

Death Following a Vaginal Douche of Lysol. A. CHVOJKA (*Zentralbl. f. Gyn.*).

In the Prague clinic the writer was accustomed daily or on alternate days to give vaginal douches of 4 or 5 litres (8½ pints) of a 1 per cent. solution of lysol to every primipara over 30 as a prophylactic against rigidity of the os. The results were satisfactory until the following case occurred.

During the administration of a lysol douche the patient sud-

denly complained of cardiac oppression. The pulse became infrequent and the face cyanosed, and shortly afterwards respiration was slow and superficial with tracheal rattling. After artificial respiration with massage of the heart the woman regained consciousness and exclaimed that she was dying. Consciousness was again soon lost, and in spite of all attempts at resuscitation death occurred three hours after the injection was given. The child died simultaneously. Post mortem the only abnormality found was that the placenta near the internal os was slightly detached. There was no air embolus.

The injection was given by an experienced midwife in the writer's presence with the patient in the usual examination position. There was no discharge of blood. The only theory which would explain the facts is that the lysol was absorbed from the small area of placental detachment.

The writer has given no intra-uterine douches even in cases of retained and decomposing placenta—during the last 14 or 15 years. The only exception he makes is to give an intra-uterine injection of 50 per cent. alcohol in retention of lochia with pyrexia. Before this period some cases of puerperal tetanus occurred, and all obstetric operations were as much as possible avoided. The results are at least as good as when intra-uterine douches are given and the rigors so common after injections are avoided.—*The Medical Review.*

Editorials.

CANADIAN MEDICAL ASSOCIATION.

For the forty-third annual meeting of the Canadian Medical Association in Toronto on the 1st, 2nd, 3rd and 4th of June, transportation arrangements are in force on the standard certificate plan, with the exception of British Columbia, where the regular summer tourist rate will prevail. All intending delegates should consult with their ticket agents when purchasing first-class transportation to Toronto as to rates, dates of sale of tickets, time limits, and routes. For these purposes the Association and the Canadian Dental Association are coupled, and fare will be single for going and returning if three hundred are present at the two conventions holding standard convention certificates, between Halifax and other Eastern points and Laggan and Coleman, B.C. The first general session will be held on the afternoon of the first day, when the President-elect, Dr. Adam H. Wright, Toronto, will be installed in office, and the opening ceremonies will take place. Following this there will be a report of the Milk Commission by the Chairman thereof, Dr. Chas. J. Hastings, Toronto, and addresses by Dr. Evans of Chicago, Dr. North of New York, and others. On the evening of the first day Dr. Herringham, of London, England, will deliver the address in medicine, which will be followed by the discussion on Dominion Registration. The sections, which have exceptional programmes, will meet in the forenoons. On the afternoon of the second day, Thursday, there will be an excursion to Niagara Falls and a dinner at the Clifton House. The address in surgery will be delivered Friday afternoon by Dr. Murphy, of Chicago, followed by a symposium on exophthalmic goitre, and at 5.30 p.m. the annual meeting of the Canadian Medical Protective Association will be held. Friday evening the address in obstetrics by Dr. Henry Coe, of New York, followed by a symposium on the psycho-neuroses. A general session will be held Saturday forenoon, and about eleven o'clock an excursion will be taken to Guelph to visit the Ontario Government institutions in the Royal City.

THE CANADIAN MEDICAL ACT.

Notwithstanding many bitter disappointments in the past we are very much pleased to note that Dr. Thos. G. Roddick, of Montreal, is still taking a very active interest in certain proposed amendments to the Canadian Medical Act of 1906. Our readers will remember that these amendments were fully discussed at the last special meeting of the Ontario Medical Council, held December 7th, 1909. It was then expected that the proposed amendments would be considered by the Dominion Parliament during the present session. For certain reasons, which will be discussed shortly, the matter was deferred for another year. Dr. Roddick has done magnificent work for many long years in connection with this very important matter. These efforts have been highly appreciated in all parts of the country from the Atlantic to the Pacific. The prospects have frequently appeared very bright, but clouds have suddenly arisen from various quarters. We are authorized to state that the matter will be again discussed at the next meeting of the Canadian Medical Association, to be held June 1-4, at Toronto.

THE CARE OF EPILEPTICS.

It is fairly well known that Dr. J. J. Williams, the Medical Superintendent of the Hospital for Epileptics at Woodstock, holds some strong views with reference to legislation for epileptics. He has referred to this matter in two or three of his annual reports.

He has expressed the opinion that a law should be passed prohibiting epileptics from marrying until at least ten years have elapsed after a previous attack. In his last report he says there is a very prevalent belief among the laity, and also to a limited extent among medical men, that the marriage state will improve the trouble in either sex. Several cases have come under his observation where patients have been advised to marry because it was likely that such marriage would cure the disease.

He admits that occasionally the attacks may be arrested in females, but says they will soon recur in an aggravated form, making life miserable for both the patient and her friends. In addition there is the grave danger of the offspring being affected in a similar manner.

Dr. Williams believes that the epileptic in certain stages of the disease is not responsible for his actions, and at such times he may do injury to himself or others, having no recollection of doing so after the deed has been committed; he may commit such deeds without any motive that can be ascertained. In speaking of these things Dr. Williams has no reference to those cases where epileptics commit deeds under the stimulus of violent anger or excitement.

FILTRATION PLANT IN TORONTO.

Considerable progress has been made in the construction of the Filtration Plant on Toronto Island. A large section of the concrete pipes is laid and the floors of the filtration chambers or tanks are nearly all laid. It is hoped the work will be completed sufficiently to allow the plant to come into operation at the end of the year. The plant covers an area of about ten acres, and will have a capacity for filtering 40,000,000 gallons of water daily. Twelve filtering stations are being installed. When the plant is in full operation one or two of these will be cleaned each day. The water from the lake enters through a steel pipe and will flow into the filtration tanks, these will contain a filtering compass of about one foot of gravel and three of sand, through which water will percolate. It will then pass into the regulator chambers and reservoir. From the reservoir the water will flow through concrete pipes to the regulation houses, where it is diverted to the iron pipes that feed the tunnel.

The filter chambers are arranged six on either side of the regulator houses. They are constructed of concrete with ground floors, and a roof which is supported on concrete pillars. After the filters have been in operation for some time the sand will be removed and new sand substituted. The sand removed will be thoroughly washed and cleansed so that it may be utilized again.

HOSPITAL FOR SICK CHILDREN.

The authorities of this hospital have sent out a very important circular to the physicians of Toronto. It gives full information regarding the modified milk mixtures for well babies, which are prepared in the pasteurization department of the hospital, 253 Elizabeth Street. The pasteurizing plant was installed last October and has been in successful operation since the first of November. The milk is pasteurized on the plan adopted in the Strauss Laboratory in New York. In addition, certain mixtures are prepared in the same department, so that after pasteurization the count is zero. The price for the pasteurized milk is 10 cents per quart, and for the cream 60 cents per quart.

Modified milk mixtures are made up according to five different formulae. The cost of these mixtures is from 5 to 16 cents each, which covers one day's feeding. As a sample of these we will take formula No. 3, containing ingredients for a child 4 or 5 months old, as follows: 16 per cent. cream, 5 oz.; whole milk, 10 oz.; milk sugar, $1\frac{1}{2}$ oz.; lime water, $1\frac{1}{2}$ oz.; boiled water, 38 oz.; fill seven bottles, $5\frac{1}{2}$ oz. each; feed every three hours: price of mixture, 12 cents. A deposit of 42 cents is required on the bottles, which will be refunded when the bottles and stoppers are returned. The hospital does not deliver either milk, cream or milk mixtures, but physicians can obtain any of them by sending to the pasteurizing plant, which is open from 9 a.m. to 5 p.m. daily.

UNIVERSITY OF TORONTO.

At the annual meeting of the Toronto Branch of the University Alumni, held in Toronto on the evening of April 13, some subjects of great importance were discussed. One of the most important of these was the discussion on the standard of the University entrance examination. It was contended that the standard should be materially respected. Nearly all of the subjects now contained in the curriculum for the first year can be

taught in the high schools. The advantages in favor of increased work in the high schools are that in teaching elementary subjects, because of the longer terms, there will be smaller classes and closer personal touch between teachers and scholars. From a medical standpoint it is thought all pupils intending to study medicine should receive courses of instruction in biology, chemistry and physics.

THE ONTARIO MEDICAL LIBRARY.

It fortunately happens that the authorities of the University of Toronto have a very kindly feeling for the Ontario Medical Library and the Toronto Academy of Medicine. Certain negotiations between the Governors of the University and the Trustees of the Academy of Medicine have taken place during the last few weeks. The latter asked permission from the University to put up certain buildings in addition to the one now existing in Queen's Park. They desire to build a stack-room, an auditorium and small rooms for contents, etc. They expect to spend, in all, for this purpose about \$25,000 or \$30,000. It appears, however, that the University desires to get the lot at present occupied by the Academy as soon as possible. In lieu thereof it is probable that the University will lease to the Academy another lot, which it seems will suit the Trustees of the Academy better even than the present lot. To show that this is a very friendly act and a high compliment to the Academy, it may be stated, that in all other cases the University will take up its leases as they fall due. It is most likely that under the new lease there will be no building restrictions such as accompany all the leases at present in existence.

THE NEW HOSPITAL.

As was expected, the By-law submitted authorizing the grant of a further sum of \$250,000 towards the cost of the New General Hospital, April 9th, was carried by a large majority.

The total vote for the By-law was 3,860, against 549. The vote was comparatively small, but the majority something like seven to one was large. The voters opposed to a by-law are, as is well known, more apt to come to the polls than those in favor. It may be considered, therefore, as a result of this vote, that the feeling of the citizens was almost unanimous in favor of the By-law.

It is expected that the total cost of site and buildings will be about two and a half million dollars. Private citizens have contributed \$900,000; the University of Toronto, \$600,000, and the City of Toronto, \$450,000, making \$1,950,000 in all. This leaves about \$550,000 yet to be raised.

The plans after much careful study, many consultations and many trips to distant cities, have been approved by experts in Canada, and by some of the foremost hospital authorities in Great Britain and the United States. It is generally conceded by all who have examined these plans that the proposed buildings will constitute when built one of the world's great hospitals.

There can be no two opinions as to the site: it is beautifully situated beside University Avenue, close to Queen's Park, and almost exactly in the centre of the southern half of the city. The New Hospital will have 547 beds for in-patients, an out-patient department capable of taking care of 350 patients daily, and accommodation for 16 house doctors, 175 nurses and 100 servants.

AUTOMOBILES FOR DOCTORS.

We publish in this issue an article on Automobiles, which is made up of extracts from a long article which appeared in the Toronto Globe at the time of the Automobile Exhibition Sale in this city last March.

The motor car has evidently come to stay, and the general practitioner in Canada and the United States generally recognizes that fact. It is in many cases a hard wrench for a good horseman to give up his horses for such an unattractive-looking thing as a motor car. The physician or business man of any sort,

for whom time saving means more or less money, is nearly always very well satisfied with the results very soon after his purchase of a good car.

Considering the motor from the standpoint of economy, the greatly increased rapidity in travelling means much to the physicians, especially in cities or towns where they can use their car throughout the whole year. The extra cost in purchasing a motor car, which in the past has been rather a short-lived machine, has been a serious matter for the average physician, but things are looking more favorable in that regard at the present time than they did a few years ago. Cars are cheaper now and last longer than they did formerly. There are now many cars built, or partially built, in Canada. In many cases the various parts of a car are imported from the United States and put together in Canadian workshops. Cars suitable for physicians may now be purchased from \$500 up. The cheapest automobiles are not recommended by experts, but very good ones can be purchased at prices running from \$800 to \$1,200 each.

NOTES.

It is said that what has been talked about for some years will soon become an accomplished fact; that is, that the authorities of Trinity College of Toronto will leave their present beautiful building and erect a new College close to the University of Toronto, with which it is affiliated.

The following were elected April 18th to fill the vacancies occurring on the Council of Queen's University, and will hold these until 1916: C. Y. Chown, Kingston; Reginald W. Brock, Ottawa; W. A. Loggie, L. B. Hamilton, and Judge Fraecliek, Belleville; Rev. D. McTavish, Toronto; R. H. Cowley, Ottawa; Dr. W. H. Rankin, Brooklyn, N.Y.; Rev. W. W. Peck, Arnprior, and H. A. Calvin, Kingston.

We are told that the authorities of McMaster University contemplate leaving their present home and erecting a much larger building for their purposes on a site not far removed from the present location. It is also said that the University is consider-

ing the establishment of a new Medical Faculty. A vague rumor of this sort has been in the air for some years, but it is stated that more than a mere rumor will appear within the near future.

We learn from Dr. Brown's monthly report that the average number of patients in the Toronto General Hospital in March was the highest ever known, being 380.87 daily. The attendance at the Outdoor Department was 1,210, as compared with 980 for March, 1909. The Superintendent, in speaking of the needs of the Hospital, said that a Social Service Department was required. By this he means a department in which a doctor and a nurse visit the homes of patients to see that proper food and clothing are provided. Many poor patients are discharged from the Hospital when they have no homes to go to, and some provision should be made for them.

Personals.

Dr. Brett, of Banff, is engaged in post-graduate work in Vienna.

Dr. E. E. Meek has been appointed Medical Health Officer for Regina.

Dr. Jno. T. Fotheringham, of Toronto, left on a trip to Bermuda April 13th.

Dr. and Mrs. Murray MacFarlane, of Toronto, left for Atlantic City, April 14th.

Dr. H. B. Andrew, of Sandbridge, and Dr. T. H. Bethune, of Emu, Ont., have been made Associate Coroners.

Dr. Joachim Guinane has been appointed one of the License Commissioners for Toronto in the place of Mr. Daniel Miller, resigned.

Dr. A. E. McCulloch, son-in-law of Dr. N. A. Powell, has been appointed Superintendent of the new Sanitarium for Tuberculosis in London, Ont.

Much sympathy is expressed for Dr. W. K. Coldbeck, of Welland, who lost two children, a son and a daughter, from malignant scarlet fever in March last.

Sir Edward Clouston has been elected President of the Board of Managers of the Royal Victoria Hospital, Montreal, in the place of Mr. R. B. Angus, resigned.

Prof. W. S. Thayer, of Johns Hopkins Hospital, Baltimore, visited Toronto and delivered a very interesting address on "Functional Heart Murmurs" before the Academy of Medicine.

A new addition to the Toronto Isolation Hospital will cost \$74,000. The present building will be used for scarlet fever only, while one portion of the new building will be used for diphtheria and the other for measles.

Dr. T. A. J. Duff (Tor. '09), of Kingston, Ont., has been appointed—after a competitive examination, House Physician to Kings County Hospital, Brooklyn, N.Y. He entered upon his duties April 15th and expects to spend two years in the service.

Dr. J. Gerald Fitzgerald, of the University of Toronto, was married to Miss Edna Leonard, of London, Ont., April 29th. Dr. and Mrs. Fitzgerald have gone to Europe. The doctor will spend about six months working in the Portem Institute, Brussels, and after that he will make a comparatively short visit to Berlin.

The Government of Saskatchewan has appointed a Bureau of Health composed of Dr. Wm. Seymour, Regina, Commissioner of Health, and Dr. W. J. McKay, of Saskatoon, Dr. E. E. Meek, of Regina, and Dr. A. R. Turnbull, of Moose Jaw. The Bureau has decided to undertake an active campaign against tuberculosis under the direction of Dr. Seymour.

Obituary.

OSBORNE TOTTEN, M.D.

Dr. Totten, a well known physician in Western Ontario, died suddenly at his late residence, Forest, April 14th. The cause of death was apoplexy. In addition to his general practice he acted as coroner for his district, and was Government Medical Attendant to the Indians at Kettle and Stoney Points. He received his medical education in Trinity Medical College and graduated M.D. in 1885.

BERNARD S. KERR, M.D.

Dr. B. S. Kerr, of Birch Avenue, Toronto, died March 2nd, aged 73. He graduated M.D. from Victoria University in 1867. He had not been in active practice for several years.

GEORGE C. McINTYRE, M.D.

Dr. G. C. McIntyre, of St. Mary's, Ont., and a graduate of McGill University, died in the Royal Victoria Hospital, Montreal, after a protracted illness, March 6th.

MRS. HUNTER ROBB.

There was probably no woman in North America more widely known and more highly respected than Mrs. Hunter Robb, wife of the well-known specialist in gynecology, Cleveland. Mrs. Robb (formerly Miss Hampton) was born in Welland, Ont. After teaching school for a time at Merritton, Ont., she went to New York, where she spent three years at Bellevue Hospital, and soon acquired a high reputation as a nurse of great ability and exceptional executive skill in connection therewith. She was perhaps best known as the organizer of the Johns Hopkins

Training School for Nurses at Baltimore. She wrote much on the profession of nursing and was connected with many nursing organizations throughout the country, and was a Past President of the American Association of Superintendents of Training Schools for Nurses. Death came to Mrs. Robb in a very tragic way on one of the streets of Cleveland, April 16th, when she was caught on the devil-strip between two trolley cars. The remains were removed to Canada and buried at Welland April 19th.

GEORGE REID SIMPSON, M.B.

Dr. Simpson died at his late residence, 82 College Street, Toronto, April 8th, aged 36 years. He was a son of the late Mr. Jas. W. Simpson, of Hamilton. He received his medical education in the University of Toronto, from which institution he graduated in 1895. After engaging in general practice for some years he took a special course in diseases of the eye and ear and commenced practice in Toronto about four years ago.

We have received from the New York Academy of Medicine a very interesting and useful paper, reprinted from the *New York Medical Record*, giving a list and certain particulars respecting the Medical Libraries of the United States and Canada. In each case the name of the library is followed by the post office address, the name of the librarian and the number of bound volumes.

Selections.

Acute Poliomyelitis.

Because of the successful transmission of the disease to animals, our knowledge regarding acute poliomyelitis has within less than a year been very materially increased. In this country Flexner and Lewis, abroad Landsteiner and Popper, Leiner and Wiesner, Römer, and others, have produced in monkeys experimental poliomyelitis which clinically and pathologically is essentially identical with the disease as observed in children. Experimentally, the affection has been caused in many ways, as by injection of material into the brain, spinal cord, peritoneal cavity, blood-vessels, nerves, and subcutaneous tissues and by feeding. The disease has been transferred from a human source to a monkey, from this to a second animal, then from the second to a third, etc., until in at least one instance a series of seven was attained. This must be regarded as definite proof of what had long been suspected, namely, that the disease is infectious in nature. As would be expected from the site of the lesions, the central nervous system is the chief seat of the virus, and emulsions of the brain or spinal cord are generally used as injecting material. Flexner and Lewis, however, produced the disease in a monkey by injecting emulsion of lymph nodes connected with a nodule resulting from subcutaneous inoculation, and also by using the nasopharyngeal mucosa from an infected donkey. The latter points to the nasopharynx as an avenue of elimination of the causative agent and suggests the possibility of its being also a portal of entry.

In spite of the increased facilities for studying acute poliomyelitis afforded by experimental cases, all efforts to isolate a specific infecting agent have thus far proved futile. It would, therefore, appear that we have here to deal with a member of the ultramicroscopic group of organisms. Statements as to its nature must at present be largely speculative, and in its behavior, as indeed in the lesions produced, it has many points of similarity to rabies. Among these are the following: In each the virus is filterable and in both it withstands glycerinization and desiccation over caustic potash, each acts especially on nerve tissue, and in each that tissue is the surest medium for conveying the disease by inoculation. Histologically, in each disease there are destructive changes in nerve cells, either degenerative

or due to leucocytic or other cell invasion, and in each there are conspicuous circumbasal cell accumulations. Nothing corresponding to the Negri body has been definitely shown in the lesions of poliomyelitis, though Bonhoff found in one case a ganglion cell containing two small bodies that stained red by Giemsa's method. We must look to further experimental studies to demonstrate the causative agent of infantile paralysis. Clinical observations in some of the recent German epidemics of the disease indicate that the virus may be conveyed from one individual to another by a third person. In these instances the incubation period was ten or eleven days.—*New York Medical Journal*.

Removing a Wax Candle from the Bladder by Means of Benzine.

Dr. Weisz reports the case of a wax candle which a young man of twenty-nine years had inserted in his urethra to make the flow of his urine less difficult, as he had seen his uncle do. The writer of the account of the case cystoscoped his patient and discovered a foreign waxy roll-shaped body, about 4 cm. in size, and floating. He resolved to follow the method of Lenk, who has shown that although the healthy bladder will easily bear 50 cm. of benzine, without marked irritation, in cases of strongly developed cystitis, the mucous membrane reacts more quickly; and, therefore, filled the bladder with 120 cm. sterilized water, on which the candle floated, then injected 50 to 60 cm. of benzine (*Journal of Urology*).

The benzine rose through the water in the bladder, reaching the highest surface, and then acted directly on the candle. In spite of the fact that the bladder was completely distended, the benzine came in contact with only the uppermost, and a relatively small part of the entire surface, which was in a healthy condition. The floor of the bladder, which was severely affected by cystitis, was entirely exempt from the irritation caused by contact with the benzine, and so there was no reason to fear benzine intoxication, as scarcely anything will be absorbed by a healthy bladder. In the case of his patient, the reporter injected 100 cm. sterilized water and then 50 cm. benzine, which was permitted to remain five minutes. The patient felt well and no sign of irritation was observable. Pulse 96. The liquid, evacuated from the bladder, showed two layers; a lower one, yellow (urine), and an upper one, cloudy (benzine with the dissolved stearine). The washing of the bladder was repeated, the benzine being again permitted to remain five minutes—and the return

flow again showed two layers. He made several further injections with sterilized water and dismissed the patient, intending to repeat the treatment the following day, by which time he expected the remaining portion of the candle to become dissolved, and he would eventually be able to remove the short wick with the lithotrite. When the patient made his next appearance he brought the wick, about 6 cm. in length, which had passed out spontaneously while urinating. One week later the patient was in the best of health.—*American Journal of Dermatology.*

Treatment of Epistaxis.

In the *Australasian Medical Gazette* Mr. Jas. Boyd describes a simple method of plugging the nares for obstinate epistaxis which has resisted the usual routine of compression, cold or iced douching, smart purgation, and anterior plugging. He very truly remarks that the operation of posterior plugging as commonly performed is very unpleasant to the patient, and that it requires special instruments, which are nine times out of ten not procurable in an emergency. The plan he recommends is easily and quickly followed, and requires only strips of clean muslin and a pair of dressing forceps; it is said to be almost as efficient as Rose's bag, and hardly more than inconvenient to both patient and operator. A dry piece of fine-starched muslin about six inches square is wrapped round the points of a closed pair of dressing forceps, by placing the latter in the centre of the square and then folding the muslin round the blades umbrella-fashion. This is then passed through the nares until it impinges on the posterior pharyngeal wall; the forceps is then withdrawn. The edges of the muslin are spread out over the face, and the hollow cone inside the nose is rapidly plugged with small pieces of cotton wool soaked in any available styptic-vinegar in default of the more usual astringent drugs. If—says the author—it is not necessary to plug the post-nasal fossa, the muslin can be pulled very slightly forwards after the withdrawal of the forceps, so as to clear the posterior wall of pressure before the plugs are introduced. This is worth bearing in mind, as it avoids the temporary deafness otherwise set up.—*The Hospital.*

Arterio-Sclerosis. By DR. LASZLO KETLY, of Budapest.

He classifies under arterio-sclerosis all those arterial changes which lead to a diffuse or nodular thickening of the walls, especially the intima, and which are usually followed by fatty de-

generation, sclerosis, and calcification. The process is chiefly a degenerative one, though inflammatory and productive changes are common. Simple hypertrophy of the media and syphilitic arteritis of the medium-sized and small vessels should not be included, as they form distinct and separate processes. In arterio-sclerosis the connective tissue growth is mainly hyperplastic, and the increase of elastic tissue occurs by a splitting off of new lamellæ from the hypertrophied musculo-elastic layer of the aorta or the elastica interna of the other arteries. Arterio-sclerosis results from the mechanical factors at work during abnormal vessel-strain; these factors are caused by increased filling of the vessels and temporary or permanent rise of blood pressure. But, added to this, there is always some local or general weakening, induced by general malnutrition, toxic or infectious processes, hereditary tendency, influence of temperature, etc. A sclerosis marked by degenerative and inflammatory changes above all in the media and adventitia of the thoracic aorta is caused in many cases by syphilis, and the name, productive mes-aortitis, is often applied to this condition. The first signs of arterio-sclerosis show themselves in the elastic fibres of the musculo-elastic layer of the intima and of the media of the aorta, and in the elastic intima of the medium-sized and smaller vessels. The superficial atheromatous degeneration of the intima of the aorta in young individuals is already part of the process. Secondary to the degeneration of elastic fibres there will follow a compensatory, circumscribed, or more diffuse hypertrophy of the intima. If the arteries of the extremity are found diseased, it does not necessarily mean that the aorta or other vessels are involved in the process. Not rarely arterio-sclerosis is complicated by hypertrophy of the left ventricle owing to increased circulatory resistance and renal sclerosis. The importance of splanchnic arterio-sclerosis in bringing about cardiac hypertrophy has been overestimated.

The most deleterious effect of the vessel-lesions upon the circulation is the loss of elasticity. The impediment caused by this and by the narrowing of the lumen is then compensated for by aneurysmatic dilatation. More work is rarely required of the left chamber, since all vessels are hardly ever affected. In advanced sclerosis of the splanchnic vessels and of the aorta without aneurysm, there is, however, a moderate hypertrophy. In 90 per cent. of uncomplicated cases the blood-pressure is normal. The most common complicating lesions are seated in the heart, but coronary sclerosis is present in only a certain percentage, where there is angina pectoris and cardiac asthma. The remain-

der suffer from the non-typical signs of a chronic insufficiency. In the kidneys there is a tendency toward chronic interstitial changes, which, when fully developed, will again react upon the heart. Cerebral signs often suggest neurasthenia at first, and may later pass over into a psychosis. Involvement of the sensory organs and of the gastro-intestinal tract is less frequent. In certain cases the vessels of the lower extremity are principally involved, giving rise to the interesting symptom-complex known as intermittent claudication. Important etiological factors in general are bodily exertion and nervous influences; besides these, alcohol, tobacco and tea. The diet should be simple and regular, without excessive amount of meat and spices, and fluids need not be cut off unless there is a tendency toward eczema. Attention to the stool is a matter of prime importance. In the early changes, especially in the initial cerebral symptoms, in angina pectoris, etc., iodide of potassium is of signal service. Yet this drug is unable to correct anatomical changes, so that too much should never be expected. Small doses (three times daily half a gramme) are best. There are no other specific remedies, though saltpetre has been recommended. In treating the kidneys, the attention should be directed toward the heart. Here the dangers of increasing the pressure are not as great as generally believed, but excessive rises must be avoided. In early stages of cardiac insufficiency and during convalescence from severe disease, mild carbonated baths are often excellent.—*The Medical Press*.

The Reproduction of a Pain as a Means of Making Differential Diagnoses. H. T. HUTCHINS, Boston. *Boston Medical and Surgical Journal*, January 13, 1910.

Instead of merely determining by examination the actual existence of pain, Hutchins urges that the examiner shall also attempt to reproduce the same kind of pain of which the patient complains. In this way he believes that it is possible to exclude an affection of certain organs, considered as possible origins of this subjective symptom. The necessity of such a differential diagnosis is especially likely to occur in instances where the pain is referred to the right side of the abdomen. The author cites a number of methods whereby the original pain may be reproduced. For instance, the method of Rovsing, in which pressure is made on the descending colon in the direction of reversed peristalsis; confining the gas by pressure of the hand and tapping the transverse colon. In diseases of the cecum and appendix, the actual pain of which the patient complains, will be re-

produced by this procedure. The author also mentions the Rovsing method of air inflation of the stomach by means of the gastroscope, for gastric ulcer; artificial distension of the kidney pelvis to differentiate renal from other disease; distension of different parts of the ureter and of the bladder. In a number of instances, the author has been enabled to make important differential diagnoses by this method of investigation.—*Ex.*

Solid Carbon Dioxide as a Cauterant.

The caustic property of solid carbon dioxide has long been known; it is only within the last year or two, however, that this has been taken advantage of in medicine. Zeisler, in 1908, called attention to the use of liquid and solid CO_2 in various skin diseases; Sauerbruch reported its application in angioma, and, later, Gottheil employed the solidified gas as a cauterant and recorded its use in the treatment of lupus erythematosus. More recently communications have appeared from Sutton, MacLeod, and Morton describing its use in various circumscribed affections of the skin.

Carbon dioxide, or CO_2 —popularly termed “carbonic acid gas”—as is well known, can be liquified with comparative ease. The liquid gas is supplied commercially in iron cylinders furnished with a screw nozzle. When this nozzle is opened, and the gas allowed to escape into a confined space, a portion of the gas is converted into a solid “snow.” This may be collected and pressed into moulds, when it forms a white solid resembling chalk in appearance. Solid carbon dioxide evaporates very slowly, and can be manipulated with ordinary precautions. When pressed against the skin it acts as a caustic.

In the article by Morton referred to above full and interesting details are given of the technique of its application. Solid crayons of carbon dioxide are made by collecting the snow in a towel and compressing in a vulcanite tube by means of a rammer or piston. Round rods are used for small growths, such as warts; square crayons are more useful when a large area has to be treated, as by their use no intermediate spaces are left. The crayon is held by means of a turn or two of lint wound round it, and the point pared with a knife to any required shape or size. It is then applied to the growth for about 40 seconds; if bone is immediately beneath a shorter application will suffice. On applying the crayon, the depression made by it remains, and the frozen

surface becomes hard and white like china. Reaction sets in soon, the treated area becomes swollen, and a weal forms within half an hour. The application is practically painless. After-treatment consists in dressing with boric acid ointment; if a blister has formed this should be let out. After a few days a crust forms which will come off spontaneously, and the treated area will be perfectly healed in a fortnight.

The treatment finds application chiefly for nævi; for moles and other blemishes it has been very successful, and it has a favorable influence on lupus erythematosus and on lupus vulgaris. It is particularly useful for warts. For these a longer application—one to one and a half minutes—is necessary, on account of the poorly conducting properties of the growth. The crayon should be pressed on the wart until a narrow zone of healthy tissue is frozen around its base. In the keratoses accompanying X-ray dermatitis, brief applications answer well.—*The Prescriber*.

Surgical Suggestions.

Pulsating bone swellings are almost invariably sarcomata.

Do not advise amputation for every case of bone sarcoma—the results of resection are about as good and not nearly so mutilating. Why not use radium?

The administration of thyroid extract in a case of delayed union after fracture will do no harm and may do good.

The exhibition of the X-rays or the Finsen light seems to be the best treatment for post-operative keloids (radium caused).

Cicatricial stenosis of the uterus has been the result of too vigorous curettage and of the intra-uterine application of caustics.

To avoid troublesome hemorrhage in operations for tuberculous glands of the neck first expose the internal jugular vein.

By constipating the patient, a high-seated rectal carcinoma may be pushed down within reach of the examining finger in the rectum. A small enema may balloon such a tumor within reach of abdominal palpation.

Preparatory to, and following, operations upon the brain or spinal cord hexamethylenamine ("urotropin") should be administered in liberal doses; Crowe has shown that formaldehyde then appears in the cerebrospinal fluid, and thereby minimizes the danger of infection.—*American Journal of Surgery*.

Miscellaneous.

That Important Rodent, the Rat.

One scarcely realizes the role the rat plays in international sanitation until one studies the rodent in relation not only to plague infection, with which the scientific world is more or less familiar, but in reference to rat leprosy, to bacterial diseases other than plague, ectoparasites, of which fleas are not the most important, and internal parasites infesting the animal. Assuming, as a writer in the latest publication of the Public Health and Marine Hospital Service, "The Rat and Its Relation to the Public Health," does, that there are as many rats as there are human beings, the destruction these cause can scarcely be overestimated. It is therefore easy to see that their extermination is of prime importance, if the human race is to be saved from the dangers of epidemic diseases the most dreaded in history.

A notable advance in devising measures for rat extermination was taken by Denmark, when that country passed a law giving a bounty for every rat delivered to certain designated local authorities. Grants are made to associations for the extermination of rats, to enable them to purchase preparations for the extermination of rodents. Collecting depots are provided in the larger towns, and collecting carts for smaller towns and villages.

In England an incorporated society for the destruction of vermin has begun the publication of a journal to supply trustworthy information upon the subject. "In London," the writer of the article before mentioned says, "the practice of destroying rats on the docks has been systematically carried out by the dock companies at their own expense and under the supervision of the port sanitary authority. In Liverpool and Southampton professional ratcatchers are employed." The United States quarantine regulations, too extensive to quote here, made provisions, April 1, 1903, for the prevention of the spread of plague on ships through rodents.

The precautions against rats at Australian ports are systematically carried out with fairly satisfactory results. Poison baits are used to a great extent in the interior of the country.

South American and West Indian ports are carefully guarded. Panama, especially the canal zone, as might be expected

through the influence of American sanitary officers, is well in the van in instituting measures for the destruction of rats.

In India, the land of mysticism and caste and famine, it was to be expected that the plague would make great inroads. It must be admitted, however, the government has done everything in its power to instruct the people on the necessity for destroying rats as a preventative against plague. In Madras, Bombay, Calcutta rewards are offered for live rodents; but, although thousands were captured, it had little appreciable effect upon the rat population. Religious opposition is most potent in preventing effective measures being carried out.

Chinese authorities are dilatory in instituting proper measures of extermination. Certain ordinances enacted at Yokohama and Nagasaki, Japan, have proven most effective in the latter city, 30,767 rats being destroyed in six months, as a result of the payment of a small bounty for each animal.

Cape Town, South Africa, has no authorized persons to catch the rodents, but the medical officers are requested to take all possible measures to reduce the rat population, with little apparent success.

Alexandria and Cairo, Egypt, are backward in following in the wake of the progressive cities of Europe and America.

No special measures have been taken to exterminate rats in the port of Constantinople, but the sanitary administration of the Ottoman empire has issued instructions to destroy rats and mice on all ships entering port, the expense to be borne by the owners of the vessels.

The vast country of Russia finds the authorities devising measures for destroying patriots, and has no leisure and little inclination to systematically reduce the rodent population. St. Petersburg, one of the poorest regulated, from a sanitary standpoint, of all the world's large cities, has done practically nothing with regard to rat extermination. Odessa is the only city in the empire alive to the necessity of safeguarding public health by the destruction of rodents.

Austria insists on disinfection of vessels every six months, whether they need it or not, which reminds one of the baths taken by certain more or less undesirable citizens.

Italy and Spain have made tentative experiments in destroying rodents, the latter country with poor success.

It is in France and Germany, where, next to Denmark, most attention is paid to the possibility of plague infection by means of rodents, that perhaps the most effective methods of prevention are employed. At Bordeaux "contracts have been entered into

between the government and a private individual for the extermination of rats on all ships coming from plague-infected ports," and in Havre and Marseilles systematic destruction of rats is carried out rigorously in accordance with a ministerial decree of May 4, 1906. At Hamburg and Bremen, the most important German ports, the disinfection of vessels and their cargoes is done with sulphur dioxide.—*Lancet-Clinic*.

The Vomiting of Pregnancy Treated by Adrenalin.

Rebaudi (*Gazz. degli Osped.*) speaks highly of his experience in the treatment of a severe case of hyperemesis gravidarum of more than two months' duration by means of adrenalin in small doses. Various remedies had been tried, and artificially-induced labor was seriously contemplated. In whatever way the drug acts—whether by neutralizing the toxins produced in pregnancy, by toning up the nervous and muscular system, as an antitonic, as a stimulant of tissue change, or as a regulator of the vasomotor system, or in any of the other methods which have been theoretically suggested—the author is convinced of its great therapeutic success in the cure of obstinate vomiting of pregnancy.

The Tuberculin Treatment of Dispensary Patients.

In the *Boston Medical and Surgical Journal* Hawes and Floyd give the following summary and conclusions as a result of their study of this subject:

1. Out of 143 patients with various forms of tuberculosis treated with tuberculin during the past four years, 19 have died, 16 have shown no improvement, while 108 have been benefited to a greater or less degree.
2. In no instance have they been able to see that tuberculin has done the slightest harm; reactions have been rare and invariably of a very mild type.
3. In incipient pulmonary tuberculosis, especially in children, tuberculin is a factor in increasing body resistance and in maintaining this resistance so as to prevent relapses. In more advanced pulmonary disease tuberculin will often alleviate distressing symptoms; prolong life, and occasionally help to arrest the process.

4. In localized or "surgical" tuberculosis, tuberculin has a marked beneficial effect. Its administration should always be combined with hygienic outdoor treatment, and in the vast majority of instances should be subservient to this.

5. Dispensary patients can be treated with tuberculin not only with perfect safety, but with benefit, providing that there is a close personal co-operation between patients and physician.—*Therapeutic Gazette.*

The Automobile Industry.

The day of the low-price car costing less than \$1,000 has come to stay. In the large exhibitions cars of from \$500 to \$950 take up a goodly space, and those of from \$800 to \$1,000 take up considerably more. What has been true of all other great inventions is rapidly becoming true of the automobile.

The story of the development of the automobile in Canada is but a repetition of the experience of the United States writ small upon the page.

The American Motor Car Manufacturers' Association has just finished an analysis of the American automobile industry which may be given here as an interesting basis of comparison with the trade in Canada. It shows that it has grown from two million dollars in 1898 to one hundred and thirty millions in 1908. The association estimates that there are now about 160,000 automobiles in the United States, or just about twice as many as there are in Europe. Sixty-nine thousand automobiles are registered in New York State alone. There are now 2,500 agents, to say nothing of hundreds of sub-agents. The recent panic showed little falling off in the automobile business, and constantly growing advertising capacity has been a marked feature of the business. No business has ever had so phenomenal a development. It is said that few people have been able to secure any of the three or four leading automobiles since last November, so heavy has been the demand. The same condition prevails with other makes.

Quite contrary to the prevalent idea that the best cars are made in Europe is the fact that in 1907 \$5,756,972 worth of automobiles were exported and only \$3,157,168 imported.

"It is safe to say," says Mr. Page, of the Chalmers-Detroit Company, "that there will be built in the United States this year two hundred thousand cars. Even the low average of \$1,500 for each car would mean an output valued at \$300,000,000 for

the United States. Cleveland alone will build more than thirty million dollars' worth of automobiles."

When we turn to the industry in Canada we are forced to admit that we are about ten years behind the people of the United States. Their estimated output of cars in 1898 was valued at about \$2,000,000, and if we estimate the value of cars sold in Canada during the year just passed we find that \$4,000,000 is a very fair figure. This means that about 2,500 cars were sold in the Dominion during the year, but upon examination it is found that a number of these were imported outright from the United States, and that by far the greater section of the remainder were made up of parts imported from that country and assembled by Canadian manufacturers. It is estimated that 4,000 cars will be sold in Canada in 1910, a fact which implies a still greater importation of parts from the United States, for at the present time the only firm which makes the necessary parts and assembles its cars in Canada is the Canada Cycle and Motor Company of Toronto.

A survey of the Canadian industry goes to show that many of the present so-called Canadian firms are but offshoots of parent American firms, and that the essentially Canadian concern is almost non-existent. It was in the year 1898 that the automobile made its first appearance on this continent.

The year 1905 was an important one in the history of the industry, for in that year the Ford Motor Company of Detroit established a branch in Walkerville, and commenced to assemble their cars in Canada, although no manufacturing was attempted. The industry might fairly be dated from that year, for in 1905 the number of cars sold in Canada was probably not more than 500.

In 1906 the Packard Electric Company, of St. Catharines, made an arrangement under which they began to assemble the Oldsmobile there; and in the same year the Chatham Motor Company began to turn out Chatham cars. Both these concerns ceased operations shortly.

The Comet Motor Company also began to assemble cars in Montreal the next year, using European parts, and continued in business until 1909.

Substantial advance was made in the industry in 1908, when the McLaughlin Motor Company made an arrangement with the Buick Motor Company, of Flint, Michigan, under which it undertook to put American cars on the market under the name of McLaughlin-Buick. In 1908 the Tudhope Carriage Company, of Orillia, began the manufacture of a high-wheeled or buggy type

of machine. The fire which destroyed their plant in 1909 terminated this branch of the business, but it is understood that they intend turning out automobiles in connection with their new business now developing. A similar type of high-wheeled car is also being produced by the Kennedy Motor Company, of Preston. The Reo Motor Company, of Lansing, Mich., has also established a branch in St. Catharines and will assemble there. The rise of the E.-M.-F. Motor Company, of Walkerville, as a branch of the Power Detroit Company is also of this period.

The year 1910 will probably see unprecedented strides in the automobile industry. Already two companies are about to set up plants in Windsor. The Regal Company, of Detroit, plans to assemble its cars there, and a new concern, financed by Detroit and Windsor people, will, it is understood, establish a factory for the manufacture of a car called the Royal Windsor.

It is not fair, however, to judge the Canadian industry by the small number of concerns which manufacture all the parts and assemble the cars. The demand for the automobile in Canada is steadily increasing, and out of the demand for parts a large industry has grown. The Conboy Carriage Company devotes the greater part of its attention to the manufacture of bodies, tops, glass-fronts and other automobile requisites. The Gray Carriage Company, of Chatham also does a large business in the manufacture of bodies. The Dunlop Tire Company, of Toronto, the Gutta Percha and Rubber Company, of Toronto, and the Canadian Rubber Company, of Montreal, are also largely dependent for trade upon the demand for automobiles, while the Goodyear Company, of Akron, Ohio, is establishing a branch for the manufacture of tires in Durham, Ontario. Auto lamps are manufactured by Chadwick Brothers, of Hamilton, and the demand for leather for upholstering has largely increased the business of Marlatt & Armstrong, of Oakville.

The advent of the automobile into Canada has had its effect in nearly every branch of trade. Many firms have felt the influence directly, while on others the effect has been so subtle and indirect as to be discredited. Tires, wheels, bodies and tops are usually Canadian made, and a considerable amount of assembling is done in Canada. In other branches of the business, the tendency is for a steady increase in importation from the United States. The amount of capital invested in Canada is about \$4,000,000, and the number of men employed about 3,000.

A point which often escapes attention in a discussion of the automobile situation in Canada is that the good roads movement is at the same time unconsciously a movement for cheaper ma-

chines. Manufacturers and owners are aware that the great obstacle to lower-priced automobiles at the present time is the American tariff of about 33 per cent. Despite the fact that the duty on British machines is but 22 1-2 per cent., it is still necessary to import the American car with its special adaptability to poor road conditions. The British car, on the other hand, is built for the fine roads of England and the realization of better roads in Canada will mean the importation of the British at a considerably lower figure than the American makes.—*Toronto Globe*.

Diathetic Anemia.

Although it is considered an axiomatic principle that successful therapy depends upon the abolition or removal of the causative factor of any diseased condition, it is often the part of clinical wisdom to adopt direct restorative and hematinic treatment while the underlying operative cause is being sought for and remedied. It is of course well understood that the general anemia and devitalization dependent upon and caused by any of the constitutional diatheses or dyscrasie cannot be successfully combated by hematics and tonics alone. In Specific, Rheumatic, Tuberculous, Malignant or Paludal infections, the primal cause must be attacked with all the weapons of modern medical warfare that are likely to be of service, either antidotal or nutritional. At the same time, it is quite certain that a perfectly bland, non-irritant and readily tolerable hemic restorative, such as Pepto-Mangan (Gude), is needed. This palatable preparation of iron and manganese, in the form of organic peptonates, can almost always be given with distinct advantage to appetite, digestion, nutrition and general "well-being," while causative therapy is under way.

Furuncles Treated by Bier's Method.

Bier's method of hyperæmic congestion for all manner of local inflammatory conditions has been so much reported upon and discussed of late that its possibilities, as well as its limitations, are now well recognized by the profession. The treatment of furuncles of the face by this method would appear, however, to offer special difficulties, and a report on a number of cases so treated by Dr. W. Keppler, assistant of Dr. Bier, is not without interest. His report deals with 12 severe cases of furuncles of the upper lip, and 24 cases of a more mild nature, in which the lower lip and other parts of the face were affected. All the

cases were cured by the treatment in the course of four to six days. The technique of the treatment is as follows: an elastic band, three centimetres wide, is applied around the neck as low as possible and fixed at the back by a hook and eye. It need only be drawn moderately tight, as stasis is easily produced in the neck with only a moderate amount of constriction. A compress may be placed within the band. The band should be kept on for 20 to 24 hours. The inconvenience experienced soon passes off. The face becomes swollen, and especially the affected parts. At the end of one to three days of hyperæmia the inflamed area softens and suppurates freely, then the discharge diminishes, and is followed by the process of healing. Applications should be made each day, the duration being gradually reduced, till the inflammatory process is at an end and repair of the tissues commences.—*The Hospital*.

Chorea Treated by Psycho-Therapeutics: Milk-Isolation Treatment.

The next patient, gentlemen, is this little girl, aged eleven; she was admitted to the hospital three weeks ago, on May 19, suffering from severe chorea without any cardiac complications. The choreic movements were very marked and affected the limbs on both sides of the body, as well as the face and tongue. You will see that to-day she is perfectly steady, the choreic movements have entirely disappeared, the chorea has, in fact, been cured in two and a half weeks. This is a very striking result, for most cases of chorea continue much longer than this, at all events under ordinary forms of treatment.

Now what treatment would you suggest in a severe case of chorea?

A student. Arsenic.

Another student. Salicylate of sodium.

A third student. Isolation and arsenic.

Dr. B. Up to the present time, arsenic is perhaps the remedy which has been chiefly employed in this country in cases of chorea; it is usually given in gradually increasing doses. The results have been thought to be satisfactory, but I must say, judging from my own experience, I have been disappointed with the arsenical treatment of chorea. Further, I have always had great difficulty in deciding in my own mind whether the improvement, which undoubtedly occurs in cases of chorea treated in hospital by progressive doses of arsenic, was due to the remedy (the arsenic) or to the rest, feeding and general hygienic measures which are concurrently employed.

Another remedy which recently has been given in cases of chorea, it is said with marked success, is salicylate of sodium. You are aware that the heart lesion in chorea—the endocarditis affecting the mitral valve—is indistinguishable from rheumatic endocarditis. Further, it has been shown that the rheumatic organism—the *diplococcus rheumaticus*—is present not only in the heart lesion in cases of chorea, but also in the tissues of the brain. Chorea is, in short, a rheumatic condition, hence the employment of salicylate of sodium in chorea.

For some time past I have been treating cases of chorea in the same way that I treat cases of functional nervous disease, viz., by psycho-therapeutics, isolation, large quantities of milk, and hypodermic injections of water. The results in some cases have been surprisingly good; the present case is perhaps the most successful that I have yet had.

As I have already told you, the patient has been three weeks in hospital. When she came in, she was suffering from well-marked chorea; for the first four days after her admission, she was treated by arsenic, 2, 3 and 4 minims being given, three times a day. On the fourth day of this treatment, I saw her for the first time and advised that the arsenic should be discontinued and that the psycho-therapeutic plan of treatment with isolation and milk should be commenced. The patient was told that she would rapidly get well, that she would be kept behind screens until sufficient improvement occurred, and that she would be treated with hypodermic injections and have large quantities of milk to drink.

Under this treatment striking improvement rapidly occurred and to-day (2½ weeks after the commencement of the treatment) she is, you will see, perfectly steady and the chorea is apparently cured.—*Dr. Byron Bramwell in Clinical Studies.*

Doctor Vance May, of Cornettsville, Ind., in treating a case of saccharine diabetes of long standing, in which he found a good deal of albumen present, as a result of an old gonorrheal inflammation, says the use of a few bottles of sanmetto so cleared up the urine that he could find no strings of mucus, nor the least trace of albumen by heat or nitric acid test. It also afforded a world of relief to his patient who had been suffering for years with his bladder.

TO FACILITATE EASY CHILDBIRTH some physicians prescribe Sanmetto, beginning about six weeks before confinement, with good results in every case.

The Nephro-Toxic Action of Flesh-Meat.

Linossier has recently reported to the Académie de Médecine de Paris some interesting experiments with regard to the nephro-toxic action of various meats. By subcutaneous injection of an aqueous extract of hashed meat he has been able to produce albuminuria in rabbits and guinea-pigs. The minimum dose necessary to cause this condition is very variable even when the same kind of meat is used to prepare the extract, a fact which must be attributed as much to a difference in the renal resistance of various animals as to variations in the toxicity of the meat. Albuminuria appears very quickly after the injection, and only lasts a few hours. It is impossible to cause a typical epithelial nephritis or a permanent albuminuria, even with repeated injections, the animal always dying with marked symptoms of anaphylaxis before such a condition is reached. After contact with natural or artificial gastric juice for two hours the nephro-toxic action of the meat extracts is destroyed, but contact with alkaline solutions does not produce this effect. It would therefore seem that the action of the fluid extract is not due to the extractives contained in the meat, since these are unaffected by gastric juice, but to an inherent property of the albuminous material itself. It is probable that man acquires toleration to the toxic action of meat, but this does not mean that heavy meals can be habitually indulged in with impunity. The accidental and excessive use of meat by a vegetarian would probably be productive of harm, but it is fair to suppose that regular and properly graduated meat diet would be beneficial to a nephritic. --*The Hospital*.

Von Pirquet's Reaction in Lupus.

This reaction has not proved very satisfactory in the diagnosis of visceral tuberculosis. G. Define (*Giorn. Internaz. d. Sci. Med.*), has tried it in a number of chronic skin diseases and finds it more satisfactory. The reaction was positive in all of 50 patients with lupus; in 1 of cutaneous tuberculoma, 1 of erythema iris, 1 of psoriasis, 1 of vitiligo, and 3 out of 23 cases of syphilis. If the positive reaction is mild, it takes the form of a papule appearing in twenty-four to thirty-six hours and vanishing after ten or twelve days. When it is more marked there is oedema round the papule, at a maximum on the second or third day, and the papule disappears in fifteen or twenty days. When the reaction is severe a phlyctenule appears, rupturing in a few

days and scabbing over; the last traces disappear in about a month. All these reactions appear within thirty-six hours; in a few instances Define has seen a "late reaction," a slight red papule forming after four or five days and lasting ten days or so. This he counts as a positive result. His inoculations (101 patients) produced no complications, no fever, and no discomfort beyond a slight itching in a few instances. He used "cuti-tuberculin" from the Pasteur Institute at Lille, scarifying the skin in four places, not deeply enough to draw blood, inoculating two, and putting on a sterilized dressing. The skin was first cleaned with ether.—*British Medical Journal*.

The Relation of Alcohol to Immunity.

Parkinson reaches the following conclusions in an article contributed to the *Lancet* of November 2, 1909:

1. Alcohol in small quantities has no action upon the phagocytic activity.
 2. It has no action on the phagocytic activity until it is present in 12.5 per cent. strength.
 3. Small quantities of alcohol injected into rabbits may stimulate the production of antibodies temporarily.
 4. A large dose of alcohol lowers the opsonic index for twenty-four hours.
 5. Continuous moderate doses of alcohol cause a permanent lowering of the opsonic index.
 6. The reacting mechanism to vaccines is much less effective in alcoholized rabbits than in normal rabbits; the difference is still more marked when living micro-organisms are used.—*Therapeutic Gazette*.
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Caisson disease seems destined to be of increasing importance because the progress of civilization and the congestion of population are creating more and more need of tunnels and bridges, the construction of which requires the laborers to work in compressed air at great depths. The cause and prevention of the disease are well known, and yet, in spite of all precautions, cases continue to be produced and show the need of further investigation. It seems a simple matter, yet there are curious accidents proving that it is far from simple, and that there are individual as well as seasonal variations in susceptibility. Under compression more gases are dissolved in the blood, and if decompression is rapid, these gases must escape as when a champagne cork is withdrawn, and the bubbles of gas in unyielding cavities

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THE PRESIDENT'S ADDRESS*

BY ADAM H. WRIGHT, B.A., M.D., M.R.C.E. ENG.

Professor of Obstetrics, University of Toronto.

THE GENERAL PRACTITIONER.

It is supposed by some that the general practitioner will soon become extinct. Although that seemed possible or probable a few years ago in some cities, such as New York, Chicago, etc., it appears that the pendulum is swinging the other way, and the family physician is now considered a necessity in most homes. There is perhaps no member of an ordinary community who comes more prominently into view than the doctor. He must run the gauntlet of criticisms very varied in character. Sometimes these criticisms are harsh and unjust, but on the whole we have no cause to complain. One of the finest characters ever described was Dr. McClure. How many such there are we know not: but there are a few—perhaps many. We might name one—Gawn Shaw Cleland of Toronto, who “crossed the bar” last January. The *Toronto Globe*, in an obituary article, said respecting Cleland: “He was loved and respected by his patients and was looked upon throughout the community as another Dr. McClure.”

He it was or such as he that Luke Fildes had in view when he painted that great picture, “The Doctor,” nineteen years ago. Sir Mitchell Banks, of Liverpool, England, made the following reference to it in 1892: “Of the hundreds of medical men who have stood before that picture I am sure there was not one whose pulses it did not quicken with pleasurable pride, or who left it without thinking that it already had been, and again would be his privilege to fight against pain and suffering and death like his colleague on the canvas. Note where the scene of the picture is laid: not in some rich man’s mansion, but in a workingman’s cottage. With admirable skill

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the painter has pitched on the early hour of the morning for the time. . . . The sick child, worn with the raging fever, lies spent and exhausted. Till then the parents have been fighting on with their nursing: soothing, caressing, encouraging their little one, and hoping against hope seems all that is left to them. And there sits their friend—the gentle doctor—watching with them, and still puzzling his brains to think what more he can devise to stay the lamp of life from flickering out. He is no courtly physician, no London specialist, that man (thank God!). He is only a country doctor. But his somewhat rugged face tells of honesty, and common sense, and self-reliance, and gentleness. What more do you want? The men that look like that man, whatever be their business or trade or profession, whatever be their wealth or their social position, I say, of such men is the kingdom of heaven.” The original picture is now in the Tate Gallery, London. We do not pretend that the majority of physicians are saints or heroes; but we do contend that the practice of our profession furnishes grand opportunities for good work in the interests of suffering humanity. We are proud to think that in all parts of Canada there are physicians who make the most of such opportunities.

Some may wonder whether Fildes' doctor will continue to exist. We are told that therapeutics is becoming unpopular because there has been in the past, and is now, too much empiricism in our methods of treatment. The all-important subjects among the final branches are diagnosis, prognosis and pathology. It is supposed by some that the “McClure” and the “gentle doctor” will go out of fashion, and that the modern physician will struggle longer and puzzle more over his diagnosis, and, then in a case such as Fildes' sick child, he will turn to the mother with a bland smile on his wise face, and say to her: “Madam, this is really a most interesting case. It has been very puzzling, but I am pleased to be able to say I have made a diagnosis and prognosis. This child has malignant endocarditis and will die in about five or six hours. I can do nothing more for you now, but I shall call in the morning to make a post-mortem examination.”

One of the most vexed questions of the present day is the preparation of general practitioners, *i.e.*, methods of medical education. In recent years there have been many discussions on the subject in the British Medical Association. I am glad that our friend, Dr. Connell, of Kingston, will read a paper on the subject at this meeting. The amount of work in all departments of medicine has increased so enormously during recent years that students are bewildered, confused and dis-

heartened. The students of to-day bolt more, and cram more, and observe less, and think less, than did those of ten to twenty years ago. There seems to be little continuity between the teaching of the primary and the final subjects. In the early years the students are now swallowing pure and applied science in masses too big for their assimilative organs; or, in other words, are largely memorizing facts without understanding them. It is believed by many that this unfortunate condition of things exists in many, if not most of the best medical colleges in North America, as well as in the old world. It would appear that the level-headed Britishers are realizing the situation more fully than the teachers of any other countries.

Francis Shepherd, of Montreal, in his presidential address before this Association in 1902, referred to certain defects in modern laboratory teaching. There is probably no man on this continent who understands this subject more intimately than he from two standpoints—the scientific and the practical. He expressed the opinion that in many of our modern hospitals with their laboratories “students are not taught to observe so carefully the evident symptoms of disease, and are becoming mere mechanics. . . . The higher and more intellectual means of drawing conclusions by inductive reasoning are almost neglected.”

On the other hand we have scientists who think that such ideas are entirely wrong and not even worthy of consideration. Some of our advanced educationalists are even growing a little tired of Johns Hopkins, because those Baltimore men still stick to the old-fashioned idea that the student should be encouraged to observe and think and reason. We are told that they hope soon to be able to manufacture machine-made physicians and surgeons who will be vastly superior to the home-made article.

As a matter of fact, the differences between the schools of thought commenced many years before Shepherd sounded his note of warning. About fifteen years ago the late Sir George Humphry, Professor of Anatomy, Cambridge University, in an address delivered in Oxford, spoke as follows about methods of teaching medicine: “There is too great a mass of facts heaped on the memory and too little reflection on them. . . . The sciences of physiology and histology have become, and those of pathology and anatomy are becoming, more separated from medicine, delegated to special teachers, doubtless to the advantage and width of scope of these sciences, and to the greater knowledge of them, but I fear there is hereby engendered a tendency to take the student too far afield. . . . It is apt to

lead too much to meandering in altitudes, too little to straight going on *terra firma*; too much to pride and obtrusiveness of supposed higher knowledge, too little to reasoning, and too little to power by reasoning upon simple data, and too little to that sort of reasoning which constitutes the basis of common sense. The scientific and the practical, in short, become too much separated. What is needed is a greater regard to that connection between the two which should be maintained through the whole period of study." If these opinions expressed fifteen years ago were correct, they will apply with still greater force to the teaching of to-day. Let us come to more recent times—especially the last two years.

Let us quote from a physiologist of high repute. Professor Ernest Sterling, of University College, London, during a discussion at the meeting of the British Medical Association at Sheffield in 1908, said: "The tendency for anatomical education to be imparted by professed anatomists has led to increased demands upon the student in the way of accuracy of knowledge.

. . . Pharmacology is practically a new science. . . . The work demanded of a student has practically doubled in amount and is steadily increasing. What is the result? We are trying now to get two pints into a pot that formerly held one. . . . The result is that the student is over-burdened from the very beginning of his career. In his first year we try to make him a man of science. To this end we stuff him with facts and absorb the whole of his time in classes, so that he has no leisure for independent thought."

The following extract is taken from a leading editorial in the *British Medical Journal* last April: "Biology as taught by non-medical biologists must go. All the biology a student wants can be given him in his physiological and anatomical courses, and in the study of parasitology and helminthology under the pathologist. Chemistry in the future must be taught by the physiological chemist, and physics by the physiological physicist, by medical men who have gone through the whole training and know the needs and aims of practical medicine. . . . In anatomy great reform is needed, for the size of the present textbooks, and the mass of useless detail required, have reached the limit of pedagogic absurdity."

While our college professors are studying methods in medical education, many of our general practitioners are watching the situation with a very deep and intelligent interest. We think the majority of physicians consider it unwise to endeavor to stuff a quart of material into a pint pot. Many of them also

believe that our teachers should teach less in order that our learners may learn more. A certain proportion favor Fletcherization because of their belief that the intellectual pabulum given to our students should be properly digested and thoroughly assimilated.

By a process of evolution the general practitioner frequently develops into a specialist. We have also the ready-made specialist, to whom reference has previously been made. The relationship between the general practitioner and the specialist has been much discussed in the past. Dr. Matthew D. Mann, of Buffalo, read a paper last February on "Dichotomy" or "Dividing Professional Fees." It would appear from what he says that a large proportion of surgeons in the United States are in the habit of giving percentages or commissions to physicians who send them patients, without the knowledge of the latter. I hope it is not necessary to tell members of this Association that such conduct is undignified, unethical and dishonest. It is quite true that the division of fees between the general practitioner and the operating surgeon is frequently or perhaps generally unfair to the former. How can a more fair division be made? We are inclined to think the general practitioners must find that out for themselves. At the present time the relationship between general practitioners and specialists is being considered by a strong committee nominated by the Medical Society of the County of Erie, New York. We shall look forward to their report with much interest.

The general practitioner takes great interest in the work of the specialist. When he goes into a modern hospital theatre while a surgical operation is being performed he beholds something which fills him with wonder and admiration. He asks: "What are these which are arrayed in white robes? and whence came they?" The master of ceremonies answers: "These are they who have discovered something 'more rational' than antiseptic surgery as practised by Lister." The general practitioner does not object to a uniform. The surgeon may wear a nightcap, a mask, a nightgown, mittens and top boots in his well-equipped hospital with all sorts of new apparatus and laboratory appliances if he pleases. There is grave danger, however, that the undue exaltation of modern histrionics may overshadow the real essentials in connection with the prevention of sepsis. We want men of the Lister type to teach our students and practitioners. The wondrous charm of Lister's simplicity in his methods of teaching and operating is one of the most delightful things the world has ever contemplated. Some of our shining lights nowa-

days, in hospitals and medical societies, appear to aim at giving exhibitions of their skill instead of imparting some practical knowledge to the everyday doctor—knowledge that will help him while working on the side lines or in the backwoods, where theatrical costumes can scarcely come into general use.

When His Majesty our late king came to Canada in 1860 he travelled from the far East as far West as our railway trains could carry him. That far West was Sarnia, in the Province of Ontario. If he had returned twenty-five years later he might have travelled more than two thousand miles further west to a beautiful town called Victoria. There are now in that great Western district populous cities and towns in all parts, well-cultivated farms, with an active, intelligent people building up one of the greatest countries in the world.

That great new country has helped this Association very materially during the last twenty years. The crowning result appeared last year when there was held in that modern, beautiful city, Winnipeg, the largest and most successful meeting our Dominion Medical Association has ever known. We slow, sleepy folk of the East respect our brethren of the West because of ability, we admire them because of their untiring energy, we love them because of their big, warm hearts, we enjoy their generous hospitality beyond expression. We are becoming infected with something akin to their boundless enthusiasm. Especially is this the case in connection with the question of Dominion registration.

The discussion on this subject in Winnipeg was one of the best that have occurred during the last twenty years, and the address delivered by Dr. Thornton, of Deloraine, Manitoba, was one of the best our members have ever heard. He directed our attention to the national side of the question. He told us that "Canada had made great strides towards nationhood in many of the important details of national life, but in the practice of medicine this ideal was no further advanced than in 1866 when Confederation was accomplished. The Provinces were to-day as widely separated as if they flew different flags. There was no such thing as a Canadian physician or a Canadian Medical Association in the broad sense of the terms." We are glad to know that that broad, public-spirited member of our profession, of whom we are so proud, Dr. Thos. G. Roddick, is still taking a very active interest in this question; and we sincerely hope, both for his sake and our own, that his magnificent work will soon meet with the success which it so richly deserves.

This Association is growing not only in numbers, but also in the sphere of its work. We are now considering many matters of vital importance to the people of the whole Dominion, chiefly

in the direction of the physician's noblest and most unselfish work—the prevention of disease. We shall have the pleasure this afternoon of learning something respecting the invaluable work accomplished by one of our committees, known as the “Milk Commission,” during the past two years, under the able chairmanship of Dr. Chas. J. Hastings.

It would be interesting to give some account of the work done by our Executive Council, the various standing committees, the committee having in charge the establishment of a journal, the local committees, and many individual members in all parts of this big Dominion during the past year. Your President on this occasion, however, cannot find words to describe their work in a fitting manner. Even if he were inclined to undertake such a task the Committee of Arrangements has not given him a sufficient number of hours to accomplish it.

We are all happy now over the present condition of our Association. We are filled with hope for the future. We are becoming national in the true sense of the term. May I add—we are growing more imperialistic. We really want not only Dominion registration, but also reciprocity with the profession of our dear Mother Country. Although we are plunged in grief over the appalling calamity that has befallen our great Empire, our wish, our song, our hymn, our prayer is still—God save the King.

RADIUM TREATMENT OF RODENT ULCER, SKIN CANCER, SARCOMA, KELOID, NAEVI, ETC.*

BY DR. W. H. B. AIKINS, TORONTO.

Consulting Physician to Toronto General Hospital, Hospital for Incurables, King Edward Sanitarium, etc.

The most distinguished worker in connection with the therapeutic uses of radium is conceded to be Dr. Louis Wickham, of Paris, who for years has been devoting himself to this branch of study. He stands in the fore-front of all observers, and it is to his friendly consideration that I was enabled for successive years to make observations in the Laboratory for Radium at Paris. Sir Malcolm Morris writes, "Nothing can deprive Dr. Louis Wickham of the glory of having laid the foundation stone of scientific radium therapy."

I wish to dwell more particularly upon the use of radium in the treatment of skin cancer, as the opportunities I have had in observing its use in these cases have been numerous. I have seen radium used and have used it with satisfactory results in keloids, papilloma, naevi, tuberculosis of the skin, chronic eczema, syccosis, psoriasis acne rosacea, pruritis ani, as well as in the rodent ulcer, skin cancer and sarcoma.

Some of the writers still continue to regard the rodent ulcer as distinct from epithelioma, though pathologically no distinction can be discovered between them. The canceroid ulcer is a superficial form of epithelioma with clean cut edges which are somewhat indurated and everted and the skin may be undermined. The crateriform ulcer of Hutchison, Paget's disease, in other words, papillary epithelioma, can all be properly grouped together under the heading of carcinoma of the skin, so far as the question of treatment by radium is concerned.

Carcinoma of the skin may be classified pathologically as squamous celled, cuboidal celled, and as cancer rising from prickle cells or from the basil cells usually of greater or less malignancy, and extending into tissues where they did not normally occur giving rise to metastasis, local or general, rarely spontaneously retrogressing, but leading if not completely eradicated to general cachexia and death.⁽¹⁾

The rays from radium have a selective action on certain diseased tissue elements, affecting them much more powerfully than they do healthy tissue, and eventually causing their destruction. The types of cells on which they have the most marked

* Read at meeting of Canadian Medical Association, Toronto.

action are the comparatively weakly resistant cells of rodent ulcer, and various other pathological conditions of the epidermis, such as epithelioma of the skin and warty growths. Their destructive action has also been proved to be great in the case of cells of epithelioma of the lip and mouth.⁽²⁾

Dr. Wickham uses the word "cancer" in its widest sense, signifying the whole series of malignant new growths, histologically different, including epitheliomata, carcinoma, lymphosarcoma, lymphadenoma, mycosis fungoides, etc. Considered from this point of view he affirms, from a study of cases of tumors of each variety, before, during and after the treatment, that the malignant evolution of these tumors may not only be arrested for months, but that occasionally these tumors have entirely disappeared, giving the impression of real cure.

He writes: "To speak in a general way of the cure of cancer by radium, without specifying and explaining circumstances, is to make use of unscientific and inexact language; and too great enthusiasm in radium is apt to lead the doctor who possesses any to use too much, and thus deprive the patient of the benefits of other treatments which have already proved their utility, especially surgery. When a doctor who possesses radium is consulted in a case of cancer he should proceed as follows: (a) In cancers of the skin which are localized, superficial, non-inflammatory, and of rather small dimensions, radium is of great benefit, and he can, without exaggeration, assure the patient of a cure, but only on condition that the patient binds himself to come once each month for a long period to see the doctor, to catch the first trace of any relapse. (b) In all other cases, whatever their nature, the doctor must first consider if other means cannot do better. If surgery can do better (as in excision of the breast for an operable cancer, or in excision of a commencing and operable cancer of the tongue, etc.), then radium can be suggested to consolidate the cicatrix after operation; treatment by radium is then an auxiliary to surgery, and I consider it better than the X-rays on account of the penetrating power of the radiations. When dealing with a new therapeutic agent which has given such brilliant results from some points of view, one must be armed with all one's *sang froid*, and observe the facts with justice. The question thus presented of the part which radium is actually able to play in the fight against cancer places it, in spite of the reservations enumerated, in a good position, because it is a valuable auxiliary in sufficiently experienced hands and in certain cases which one must know how to distinguish."⁽³⁾

That radium is of great value in the treatment of malignant tumors can be asserted with extreme definiteness, but it is too early in the use of this therapeutic agent to be positive that it leads to a complete cure in all cases. On account of its great expense experimentation has been limited to the few, who were privileged to make trial of the costly mineral and to judge of its power in combatting diseased conditions.

Many have been using waters which were ascertained to be radio-active in internal cancer, such as of the stomach, and beneficial results have been claimed in relieving subjective symptoms, also minute quantities of the bromide of radium have been employed in injections and in the form of salves for permanent radiation.

The Heidelberg Institute of Cancer Research has collected much experience both with the injections and the salves. Prof. Czerney has used in his clinic the bromide of radium, and Dr. Richard Verner has reported results in connection with small epithelioma, angiomas, keloids, warts and isolated tumor nodules connected with cancer of the breast, and the results indicate a quick resolution of epitheliomatous tissue under the formation of a scab, which, when it becomes detached, leaves a small white scar and a good result from the cosmetic standpoint. Metastatic nodules also resolved if not over the size of a hazel nut, but complete healing was found to result in the angiomas and several cases of lupus. The conclusion arrived at as the result of the use of radium at the Heidelberg Institute is that taking all in all the experience of radium treatment of malignant tumors, notwithstanding all the skeptical views expressed, gives a strongly grounded hope that we may look forward to a permanency of cure in many cases.⁽⁴⁾

My observations have confirmed the statement that rodent ulcer, epithelioma of some degree, one might almost say extensive epithelioma, has been treated with success. This also applies to epithelioma of the inside of the mouth.

Finzi states that the cure of rodent ulcer when it can be reached at all is as certain as anything in medicine, and any one can improve his statistics by including this class of case.

Let me quote from Sir F. Treves' remarks of last year, founded on observations made at the Radium Institute in Paris, in speaking of the curability of rodent ulcer. He said: "Radium will cure rodent ulcers. Of what grade? Rodent ulcers that have existed for many years, in which the tissues have become adherent to the bone, or apparently to the bone, in which there is ulceration, and in which—and this is the most important point of all—in which the Finsen light, the X-rays and cataphoresis

have all been tried and have all failed. Such cases—and there are many of them—may be cured by two sittings of radium lasting one hour each, the parts being finally left free from attachment to the deeper parts, the skin being soft and pliable. Why I lay stress on such cases as these is for this reason: it has been said that radium only acts by means of X-rays, which are part of its radiation. Anyhow, here are cases, numerous enough, in which a condition is cured which has refused to heal after persistent treatment by X-rays. In other words, radium can effect a cure where X-rays cannot. With regard to epithelioma of the tongue and epithelioma of the lip. They are cured by radium. You say of what degrees. I acknowledge that the cases are in the early stages of epithelioma, but they are epitheliomata that are ulcerating, and that, so far as we know, can yield to no other treatment except that of operation. If, therefore, an epithelioma of the tongue can be cured by radium, and cured to the satisfaction of those who are responsible for the case, it is a case of epithelioma treated without operation.”⁽⁵⁾

It is interesting to note that our late King had a rodent ulcer which was cured by radium.

Finzi remarks: Epithelioma of the lips, buccal mucous membrane, palate, larynx and nose are suitable for radium treatment. The desirability of treating operable growths must be decided on the merits of the case, and the rate of growth and histological structure will have a great influence on the decision. At any rate disfiguring radical operations may be avoided by suitable radium treatment. Do not forget to treat the glands, even if not enlarged, in these cases. Epithelioma of the skin is suitable for treatment, even if rapidly growing. If ulcerated, one can give very large doses to the ulcerated portion without fear of damage.⁽⁶⁾

In the experience of almost every one who has employed radium for rodent ulcer, there is no remedy which gives such brilliant results as it does. Relapses have certainly occurred in several cases, but they have been either in cases of such an advanced type involving large areas and extending down to bone, that the quantity of radium was inadequate to thoroughly deal with them, or in which the exposures were insufficient, and the patient failing to report himself when recurrence showed itself.

Since publishing his classical work on Radium Therapie in Paris last year Dr. Wickham writes, as the result of further investigations, of the therapeutic action of radium in cancer:

“We have treated cases of cancer of the neck of the bladder with definite results, by the introduction into the urethra of a catheter containing a radium tube.

"With the help of Dr. Cousteau, a distinguished laryngologist, we treated a case of cancer of the larynx by acting simultaneously on the pharynx above and on the trachea below, through a tracheotomy wound.

"In several cancers of the rectum and intestines (high up) we were able to introduce radium through the orifice of an artificial anus.

"With the assistance of M. Gaultier and M. Labey, a surgeon of the Paris hospitals, we treated a cancer of the pylorus by our 'cross-fire' method. A very powerful apparatus, with a thick screen, was placed externally on the abdominal wall, in the situation where the pyloric tumor could be felt, whilst a radium tube of great intensity was introduced, by means of a curved catheter, into the stomach itself, through an orifice made by M. Labey for gastroenterostomy. The patient is now (ten months later) in good health.

"In some cases we have had recourse to surgery, in order to make a wide opening in large tumors by incision, or to perforate them with the Delbet gimlet, radium applicators being introduced at the base of the opening."

It may be stated that as regards the deep lying malignant tumors, including sarcoma, literature is replete with cases in which radium has given good results. I refer particularly to the literature of Wickham, Dominici, Degrais, Abbe, Wilson, Tompkinson, Roux and Caan.

The observations of Abbe, of New York on radium as a specific in giant cell sarcoma are of the most interesting character. In a recent communication he describes a series of cases of giant cell sarcoma apparently cured from an effect of specific radiumization alone. He says: "The unique retrograde changes, tending always to return to the normal, give a demonstration of the efficacy of radium as clear to the clinical student as a demonstration of euclid on a class-room blackboard." He expresses his conviction that every case of myeloid sarcoma should be given treatment by radium before an operation, and that many cures may be expected. Dr. Wickham's experience is that radium treatment is most successful in the malignant tumors of the sarcomatous and lymphadenomatous type. In the Paris Institute I saw among others a case of sarcoma of the shoulder joint which showed the favorable results of radium applied by the "cross-fire" method. Recently Dr. McCallum sent me a patient with a recurring parotid sarcoma (four months after operation), and here, after a minor operation, the beneficial results following radiation are becoming apparent under the use of the plaques and a tube containing

three milligrams of pure bromide of radium. Drs. Edmund E. King and G. Sterling Ryerson, who are using radium in their practices, saw the case in consultation.

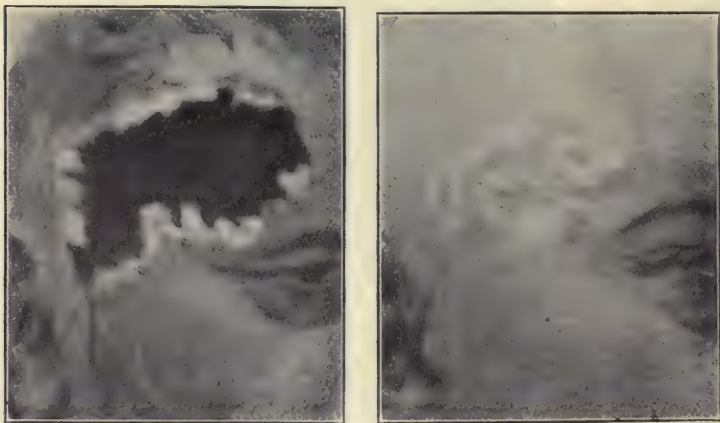
Case 1. Rodent Ulcer of the Nose. Mr. L. C., aged 34, referred to me by Dr. F. A. Clarkson, showed on the left side of the nose above the wing old scar tissue. The wing of the nose was entirely destroyed, and the skin around the margin was raised for some distance as in rodent ulcer, the inflammation extensive, somewhat elastic. The wound was covered by granulations which bled easily. The patient stated that fifteen years ago, as a result of an injury to the nose by a twig which scratched the left nostril, a small dry scab appeared on the ala nasi which came off from time to time and did not cause any inconvenience. Three years afterwards a physician was consulted and he used nitrate of silver stick, this seemed to increase the irritation, and an ulcer formed which spread rapidly. Six years ago he was admitted to one of the hospitals in Toronto and was treated for lupus. The spot was scraped, the wound seemed to heal rapidly, but shortly afterwards showed a considerable breaking down, and he protected the nasal septum with dressing and adhesive plaster so as to be enabled to continue work.



I used radium from a flat varnished surface, 1 centimetre, with a radio-activity of 500,000, at intervals for six weeks, the exposures varying from 15 to 30 minutes, the course of the improvement being watched and exposures made from time to time seemed to meet the requirements of the case. After the first three applications improvement commenced, the discharge became less and pain was absent. The decrease of the marginal

growth is well marked, with rapid absorption of neoplastic tissue, and there has been a healing of the diseased area. The patient writes under date of May 8 from Port Sydney: "I am glad to say that my nose is fine, is now quite clean without any scab; the doctor who saw me before I went to Toronto thinks it a wonderful cure."

At the Exhibition in connection with the Third Congress of Physiotherapy recently held at Paris, a room was specially reserved for the collection of photographs of Doctors Wickham and Degrais. In the collection referring to cancers, comprising the researches carried out during the last five years, was to be noted a series of sub-cutaneous cancers, apparently cured. One case was particularly striking: sub-maxillary epithelioma of the size of a fist. The tumor surrounding the vessels in the neck was *inoperable*. Dr. Louis Wickham first had the portion in front of the blood vessels removed by a surgeon, the floor of the gaping wound being covered by the cancerous mass. He then applied his apparatus with fixed dosage, some at the bottom of the wound, the others by the "cross-fire" method on the lips of the wound; the latest photograph shows the neck normal in appearance. This striking case is corroborated by others, but we notice the spirit of scientific wisdom by which the authors are careful in each case to avoid the word "cure."

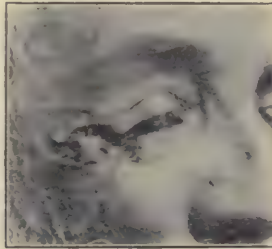


This represents an epithelioma of the right temple treated by Wickham and Degrais.⁽⁷⁾ it was bordered by large epithelial nodules, the ulcer was covered by granulations which bled freely when touched. Improvement took place slowly in this case, but after some months there was no longer any tendency to recur.

Case 2. Rodent Ulcer. Mr. B. C. B., aet. 43. Some years ago he was asked if he had had a frost-bite on the right cheek,

as a faint ring of white color was present until it ulcerated about a year ago after close shaving. It did not heal up and a physician applied nitric acid which aggravated the condition. When seen the ulcerated area was the size of a five cent piece. Applications of radium, extending over a period of three weeks, caused a disappearance of the ulcer, and the formation of a "radium crust," which was detached two weeks later, showing a smooth, supple skin which cannot be distinguished from the surrounding surface.

Case 3. Cancer of the tempero-malar region. Mr. J. D., referred to me by Dr. Colville, of Orono, noticed fifteen years ago a "mole" over the malar bone on the right side, this neoplastic growth gradually extending up to the temporal region, and a large area was involved, as is shown by the photograph. Various treatments, including exposures to X-rays, had been tried, but without avail, the diseased area continuing to increase. At the upper angle the growth was exuberant, a portion of the lower eyelid was destroyed and the upper lid bound down by adhesions, the periphery of the ulcer was elevated and painful to touch.



Radium was applied at varying intervals during a period of five weeks. I used a flat varnished surface 16 c.m. of a radio-activity of 100,000 with lead screens. The result has been eminently pleasing, there is apparently a complete disappearance of the cancer and a satisfactory cicatrizing.

Let us, however, add the needed word of caution. Abbe writes: "I have seen a few true cancers of the tongue, lip, hand and uterus, which seemed to grow more fiercely after radium treatment. Its beneficent action is not uniform, and this I attribute to the uncertain factor of correct dosage. It is probable also that Wickham's filtration will largely reduce these irritated types." And Dr. Louis Wickham in the preface to his erudite work of Radium Therapy says: "I wish to remind the younger radium workers who are in touch with our investiga-

tions of the necessity of avoiding exaggeration, particularly in connection with cancer, and of moderating their enthusiasm by a spirit of scientific criticism. Radium Therapy is indeed a very complex and delicate weapon to handle. Long and thorough personal experience is necessary in order to turn it to the best account to learn and distinguish accurately the cases for which it is the most suitable, and to avoid injuring patients either by badly proportioned doses or by depriving them of other therapeutic measures which might prove more successful."

1. Hyde's Practical Diseases of the Skin.
2. J. C. McLeod, *Practitioner*.
3. Dr. Louis Wickham, *British Med. Jour.*
4. Caan, *Munich Med. Woch.*
5. Sir F. Treves, *British Med. Jour.*
6. Finzi, Proceedings Royal Society of Medicine.
7. Radium Therapie, par le Dr. Louis Wickham et le Dr. Degrais.

HYPOTHYROIDISM—WITH REPORTS OF TWO CASES

BY W. B. THISTLE, M.D., L.R.C.P. (LOND.),

Associate Professor of Clinical Medicine in the University of Toronto.

Probably nothing in medicine is more firmly established than the fact that deprivation or great curtailment of the thyroid secretion is the cause of the remarkable condition to which has been applied the well-known name of myxœdema.

It is only, however, when the full picture has been realized that the term is really applicable. In other words, only when the disorder has become so pronounced that, together with debility, lethargy and the various other disturbances of function, the curious mucoid œdema appears.

I have for this reason chosen the more comprehensive term of hypothyroidism for this communication. There is in this term no indication of the degree of deficiency. Simply a statement of fact that the patient suffers from insufficiency of the thyroid secretion and that this is the immediate and sole cause of the disease.

As to the question of degree, this can only be read in the symptoms present.

Apart from cases in which myxœdema results from extirpation of the thyroid gland or from very acute disease, the condition is a chronic one and may be of very gradual development. If one imagines a condition in which the thyroid secretion, ample up to the present, now falls slightly below the requirements of the body and that this deficiency continues and becomes gradually more and more pronounced from month to month and from year to year, until at length a condition is arrived at which is readily recognizable as that which follows marked deficiency of thyroid, he has a fair idea of the course of the disease. Because of this gradual approach the affection is frequently not recognized or is mistaken for something else, and only after a long period of invalidism is it discovered that too little thyroid was the cause of the patient's malady.

Every case which appears presenting the classical picture of myxœdema is a case which might have been recognized if one were on the alert years probably before and the patient saved a long period of ill-health.

A further point too occurs to one looking at the situation. Every case of thyroid deficiency may not be progressive. Whatever process is going on in the gland to limit its output may come

to a halt or be exceedingly slowly progressive, in which case the classical picture would never be realized. The patient would remain in the condition in which the full-blown case of myxœdema was during the early period of the disease.

Cases of fully developed myxœdema are very infrequently met with, and it seems highly probable that for every fully developed case there may be a number in which the deficiency is sufficient to produce slight or partially developed symptoms. These cases are very likely to escape recognition unless especially looked for. The difficulty is that the fully developed picture is borne in mind, and the fact that these cases have been years in reaching that condition is lost sight of. This is really the point of my paper, to urge the importance of watchfulness in cases of obscure and unexplainable debility. In the case of thyroid deficiency recognition is doubly important because treatment and cure so surely follow a correct diagnosis. The nature of the disease is not recognized frequently because attention is focussed too exclusively on one or two symptoms. The mucoid swellings are likely to suggest the nature of the disorder. But, as in the opposite condition of thyroid excess, or Grave's disease, cases differ much in the way in which the organism reacts to the diminished secretion. All the cases of thyroid excess do not present the symptom of exophthalmas, neither do all the patients suffer from tachycardia, diarrhœal attacks or copious perspirations. In one case of Grave's disease tremor is the marked symptom, although exophthalmas, tachycardia and excitement may be present; in a second exophthalmas is the feature; in a third central disturbance, and so on. Again turning to congenital cases of deficiency, the manifestations are not always the same. One case will have macroglossia with dwarfism; the next will show no enlargement of the tongue, but will exhibit the kidney-shaped swellings over the clavicles. If all the symptoms of thyroid deficiency were borne in mind in the same way that they are in the case of thyroid excess, and if it were recognized that these effects of deficiency varied in like manner the danger of cases escaping recognition would be greatly lessened.

Diagnosis in the early stage of the malady must be very largely a matter of exclusion and experiment. The patient comes complaining of debility, lack of energy, is chilly, the skin is dry, so also the hair, ideation is slow, the temperature may be subnormal and associated with a slow pulse rate. His complaint is chiefly regarding his weakness and lack of energy.

Systematic and complete examination excludes one organ after another. Failing to find explanation of his condition in

any of the organs, one next turns to the consideration of toxic blood states. The length of time excludes the ordinary digestive intoxications usually. Other intoxications, such as lead, must also be excluded. These patients usually show some degree of anæmia, with perhaps a slightly jaundiced or muddy tint of the skin. This, taken together with the weakness without apparent cause, suggests the diagnosis of pernicious anæmia. The blood picture may not be typical, but still there is anæmia. As a matter of fact this is the mistake most frequently made. Early cases or comparatively early cases of thyroid deficiency are thought to be cases of pernicious anæmia.

In the case the report of which follows pernicious anæmia had been the diagnosis. If one excludes the blood picture there is considerable resemblance between the two conditions. The period of life; the constant and increasing weakness, which cannot be accounted for; the anæmia with jaundiced tint, and the maintenance of body weight are features in each case. Examination of the blood usually shows the abnormal forms in pernicious anæmia and reduction in count with relatively high hæmoglobin index. Most cases of pernicious anæmia show more or less elevation of temperature. Hebetude and mental lethargy are not marked in pernicious anæmia as a rule, unless the anæmia is very considerable in degree.

Failing to find convincing evidence, it is easy to make the experiment, which entails no discomfort to the patient. If thyroid deficiency be at the bottom of the patient's trouble the administration of thyroid tablets three times a day for a short period will produce marked and continuous improvement.

In the case of congenital deficiency numbers of children are permitted to grow into typical cretanoid dwarfs who could easily have been saved had the cause of their arrested development been recognized. The common mistake is to look upon a child with insufficient thyroid as either a case of rickets or one of idiocy. The cretanous dwarf stands with the adult myxœdema. Neither should occur at the present time, except in cases where medical advice was unsought. Each is here simply through neglect or through failure to recognize the signs of thyroid deficiency.

As to what lies behind the deficiency in these cases, no doubt the causes are various. In the case of little children the supposition is, at any rate in many cases, that the thyroid is deficient from the beginning and that the body simply outgrows the supply. In the adult cases thyroiditis from various causes, frequently from one of the infective fevers, is followed by cirrhotic change and lessened gland structure.

The relation which the thyroid bears to the generative organs in the female is thought to furnish an explanation of the cases which occur in women after the menopause. During the active period the gland furnished sufficient secretion for the needs of the body, but, with the atrophy of the generative organs, the thyroid also undergoes contraction, with consequent lessened secretion.

I have two cases to report:

The first, a child, now aged $3\frac{1}{2}$ years, was brought when two and a half years old because the parents had become anxious owing to the fact that the child, although over two years old, made no attempt at either walking or talking and seemed to be mentally backward. Dentition was also backward, there being only four teeth. The tongue was usually protruded from the mouth.

The child was given one-half a grain of thyroid extract three times a day. There was shortly marked improvement. In a few months the child was walking and soon ceased to protrude its tongue. It also seemed much brighter. Dentition became very active; a number of teeth were cut in a short time.

The tablets were continued until about four months ago, when the parents discontinued them on their own responsibility. In three months' time the child was again brought because of a return of the former symptoms. The eyes had become puffy, and it was again becoming listless and stupid. Constipation, which formerly had been very marked, and which had completely disappeared while the tablets were being administered, again became marked. Thyroid tablets were again ordered; this time the dose was increased to $\frac{3}{4}$ of a grain three times a day. The parents were enjoined to continue giving the tablets indefinitely and to report from time to time. Improvement very shortly became again apparent and the child became bright and active as before.

Case II. was of exceptional interest. A lady in good circumstances, aged fifty-six, and mother of three children living, but with a history of a number of miscarriages, and on one occasion, the last, of very severe hæmorrhage. Illness began indefinitely about four years ago. First noticed weakness and lack of energy. This increased gradually in spite of tonic treatment. Constipation was a troublesome condition. The appearance of the face changed so that the features were less fine cut, the lips thicker than before.

Weakness continued to increase until about a year before coming under my care, she had to give up any attempt at going out or trying to look after her home or herself. For the last year

she was constantly under the care of a nurse and confined to the house. In bed most of the day.

A number of medical men saw her from time to time. The blood was examined and her case diagnosed as one of pernicious anæmia. Treatment for the relief of the anæmia had not been successful, the patient slowly growing worse. I saw her in August, 1908. She looked older than her age. The facial appearance was peculiar. There was quite pronounced pallor, but with a slight flush on the cheeks and a bluish tint to the lips. The face had a puffy appearance and the lips were thick and the nose broader and coarser than before her illness. The hair was dark, but dry, and on examination I found commencing baldness over the temples and brow and over the neck behind. Her hair had been formerly quite abundant. The eyebrows were almost gone. Hair of eyelashes was short and thin. The lashes were said to have been unusually long and the eyebrows quite well marked.

A few pigmented spots were found on the skin of the face. There was some fullness below the eyes, but no distinct gelatiform swellings. Examination of the upper eyelids, however, showed unmistakable translucent gelatiform swellings. This was somewhat concealed by the overhang of the eyebrows. The whole of the upper lid was thickened with a peculiar waxy appearance, and in addition over each eyelid towards the inner side there was a distinct bag of this waxy or jelly-like material, about as large as a flattened pea.

Mentally the patient was very slow, although quite accurate. Her speech showed a striking change. She talked as though the tongue and teeth were sore. Formerly she had been very talkative and bright mentally.

The hands and feet were dry and cold. The patient was always complaining of the cold, and said she had not noticed perspiration for a long time.

She described a curious condition on walking. At times the knees would, as it were, lock and hold her for a short time.

Vision was fair, but tired soon. She described spectra as of a mouse or some dark animal running across the field.

Examination of the blood gave a count of about 4,000,000, with very little irregularity in forms and a slight increase in the number of leucocytes.

Nothing abnormal discovered in the chest or abdomen. Kidneys were normal.

Constipation had been a very troublesome condition. Temperature was subnormal. Pulse 55.

I ordered her thyroid tablets, grs. $1\frac{3}{4}$, three times a day, and also an acid and strychnia mixture.

Improvement was noticeable very soon. In six weeks time she was able to dispense with the services of the nurse. She became much thinner, the nose and lips lost their coarse appearance. Her behavior and speech were markedly altered. Ideation was active. Pulse became more rapid. The swellings of the upper eyelids entirely disappeared.

Improvement continued. Shortly the hair over the bared places on brow, neck and temples came on quite thick.

On Feb. 1st, 1909.—Pulse 68, temperature 98.1. Hair quite thick over neck and front, soft and glossy. The hair over eyebrows grown so as to form quite distinct dark eyebrows. Slight puffiness still below eyes. The bowels are now quite regular and she requires no purgative. She has noticed that the feet are moist frequently with perspiration. The complexion is much clearer and healthier in appearance. The lips have lost their bluish tint. The patient looks much younger. The speech is now quite normal. She talks rapidly and with former brightness. Goes to church, concerts, shopping, and looks after her household.

The thyroid tablets for a time were reduced to two a day because of occasional irritability of the bowels. Later and up to the present time she takes three tablets a day.

The latest examination, June, 1909.—The patient is still improving in every way; is practically well. Pulse about 80. Temperature normal.

The degree of curtailment of the thyroid secretion is indicated by the smallness of the dose required to cause disappearance of the symptoms.

THE DRUGLESS TREATMENT OF PNEUMONIA IN CHILDREN

BY CHARLES DOUGLAS, M.D.

Professor of Pediatrics

AND

WILLIAM M. DONALD, M.D.

Professor of Internal Medicine, Detroit College of Medicine

From a statistical standpoint institutional work has many advantages. The possibilities of uniformity in diet, in nursing, in the administration of baths and in general therapeutic measures will be apparent to everyone, and hence in such work statistics may be most readily secured. For the past eighteen years the children at the Protestant Orphan Asylum, in Detroit, have been under our care, and for the past twelve years accurate records have been kept of the maladies of these children. Their numbers have varied from 70 up to 125. For the past ten years the numbers have never gone below 100, and usually have been about 125. In the period stated, namely, twelve years, during which accurate records have been kept, there have come to us the usual number of pneumonic cases during the pneumonic season. We have had frank lobar pneumonias, apical, basal and root, and likewise broncho-pneumonias of varying degrees of severity, subsequent to whooping cough, measles and grippe. During this period we have carried out a system, which, commencing in a vague, uncertain way, gradually crystallized itself into a well defined plan of treatment. During the twelve years we have had sixty cases of pneumonia. Of these, 15 or 25 per cent. were of a mild type, and under ordinary circumstances would demand practically no medicinal treatment. The other forty-five represented all more or less severe types of the disease. They were about equally divided between the lobar and bronchial types; the lobar being a primary disease and the bronchial almost always secondary to measles, whooping cough or grippe.

During this period of twelve years all of our cases, severe as well as mild, have been treated practically without drugs. This was attempted in a somewhat timid way at first, but the crystallization of our purpose was rapidly accomplished through the excellent results achieved by our first attempts. In twelve years we have had sixty cases of pneumonia with one death, a mortality of less than one-half of one per cent. This result it seems to us, even in institutional treatment is quite remarkable.

It were better here that some qualification were given to the statement that these cases were treated without drugs. When such a statement is made, the impression which it is desired to convey is that there were no definite drug measures adopted beyond what was necessary for the relief of unpleasant, distressing or dangerous symptoms. The whole line of expectorants, febrifuges and alteratives were entirely discarded, both in the lobar and bronchial types. The rule has been that as soon as the case is diagnosed, the child is sequestered in the Infirmary belonging to the institution, which consists of two large, bright, sunny, airy rooms; well heated; in a quiet portion of the building; away from all noise and disturbing influences. The child at once receives a warm bath and is put to bed, either with or without applications of some kind upon the chest. During Dr. Douglas' term of service all chest protectors or poultices were discarded, while during the term of Dr. Donald it has been customary to apply them. There was a friendly difference of opinion here in regard to this line of treatment, of which more will be said anon. The cold air treatment was considered, only to be immediately forbidden, and all the children were kept constantly, as near as possible, at a temperature of 65 to 70 degrees day and night. The object desired was to secure not any special degree of temperature, but a uniformity of temperature, whatever it might be; and the feeling has grown that any degree of temperature is consistent with good treatment, providing that degree be maintained uniformly. However, with children from two to fourteen years of age, as are ours, many of them restless at night, kicking off the clothes, exposing themselves to the ordinary room temperatures, arising from the bed to go to the toilet room, crawling from bed to play during the nurse's absence or during their own convalescence, it has been deemed wise that the temperature be kept at a safely warm point. This decision we have never had any reason to change. It seems grateful to the patients, pleasant to the nurses, and safe to the physicians.

After the child has had a warm bath and is snugly tucked into bed, with or without his chest dressings, the temperature is taken at regular intervals of three to six hours, and upon showing any disposition to rise above 102 or 102 1-2 the child is immediately given another warm bath. This simple hydrotherapeutic measure is ordinarily all that is necessary to obtain a safe degree of temperature in the child. Should, however, the nurse be too busy, or should hot water not be available, or should any other occasion intervene so that it might be impossible or inconvenient to give the child a hot bath, the nurse is allowed to

substitute one or two grains of phenacetin, or other coal tar product, or a few minute doses of aconite, in order to moisten the skin and reduce the temperature. Beyond this no other drug is given, except that in cases of severe cough, small doses of heroin or paregoric are administered, and in cases of sleeplessness Dover's Powder or mild bromide mixture are permitted. Careful attention to the bowels and kidneys and skin is always insisted upon. The diet is liquid or soft, nutritious and palatable and easily digested. Milk is a basis and cereals, fruit juices or meat juices are allowed, depending upon the desires of the patient, and upon the capacity of the institution.

Should occasion arise in the course of a broncho-pneumonia, expectorant mixtures are ordered, and should there come, as there has come in several cases, periods of profound depression and cardiac asthenia, recourse is had to the most vigorous stimulation of the heart and vital centres. Strychnia, quinine, digitalis and the mild bitters have all been used. When they are demanded they are pushed if necessary to the limit. The occasion which would demand such a line of treatment arises exceedingly seldom. Ordinarily during the course of the disease neither this nor any other drug is given except as has been said before to meet some special indication.

Much stress is laid upon dietetic measures. For the first few days of the disease the child can take practically nothing, but after that every effort is made to induce it to take nourishment in some form agreeable to it. The desires of the child are always consulted, inasmuch as we know that where a desire is digestion is likely to follow. Food which is disliked by the child becomes often nothing more nor less than an irritant, or a toxic insert, and consequently it has always been impressed upon the nurse that the child should be fed what it reasonably desires, and what it can digest perfectly.

Upon the hydro-therapeutic measures we place the most dependence. The stimulation of the skin and the vital nerve centres, the sedation of the nervous irritability, the soothing of the wild delirium, and the production of quiet sleep we accomplish largely by this simple physical measure. Care of the emunctories we likewise consider of the utmost importance, and rigid rules are laid down to secure free elimination. Quietness and rest and sleep are secured through the quietness of the room and through the warm bath. Quietness we consider of great importance. All sources of extraneous irritation or over stimulation we deprecate and remove. The room is dark or partly shaded, strong lights are excluded, the nurse moves softly,

the child is handled gently. The alcoholics are never given except occasionally during convalescence when the vital forces show only too slight a tendency to recuperate. It would seem from physiological experiment as if alcoholics were always, or almost always, contra-indicated in this disease.

In regard to local applications to the chest, to which reference was made in the early part of the paper, there has been, as has been said, a friendly difference of opinion between the two members of the staff. Dr. Douglas has objected uniformly to covering or dressing in the shape of poultices or bandages to the chest, arguing that little was gained by such measures and much lost, that the patient was disturbed by having the dressings changed, and that the examination of the chest by the physician was always interfered with. The argument which appealed to the other member of the staff, Dr. Donald, was the soothing and comforting influence which was secured by such measures, with possibly some concession to ideas which have been in existence for many years. Arguments have been advanced pro and con upon this subject by many physicians and in many medical journals. A settlement of the question seems as far removed as ever. Our patients recovered with the applications and without them; and we find it impossible to say whether the use of such applications has been of value, other than as a salve to the fears and anxieties of the relatives or nurses. It would seem as if where there is much pleuritic pain, such application might be of service; and it would appear as if these might be discarded entirely where there was no such indication. It is a question of comfort rather than a question of cure. Where applications have been ordered, either the quilted or cotton flannel jacket, or the ordinary kaolin preparations, have been used. These latter have been selected in preference to the old-fashioned linseed poultices, on account of their ease of preparation and infrequency of application, a change being made only once in every twelve hours.

This constitutes in its simplicity what may be called the drugless treatment of pneumonia.

The type of child which we handle in an institution of this kind is ordinarily below the normal level of physical vitality. We take them as boarders and take them to adopt. They come of poor parents, who have often fed them improperly, and who have surrounded them with totally unhygienic conditions. Naturally they are often not in the best of health when they come to us, and they likewise often are not in the best of health when attacked with pneumonia. Even with these adverse con-

ditions confronting us, we have been able in this institution, by care in nursing; by the conservation of every particle of the patient's strength; by the elimination of all poisonous products from the patient's body, and by the elimination from our treatment of anything that might disturb digestion or metabolism, to secure the admirable result, which our statistics show. Our object is to demonstrate how much can be done without the administration of drugs. In pneumonia, particularly in the lobar type, drugs have little place, while in the bronchial type, infinitely less drugging than has been customary in past years may be done to the great benefit of the patient.

SANITATION IN CONSTRUCTION CAMPS

BY C. R. COUTLEE, C.E., OTTAWA.

The practical necessity of supervising construction camps is clearly recognized when one reads that smallpox has broken out or that typhoid is raging on a new railway. It is far away, however, and the death rate is soon forgotten, while the broken-down survivors become city mendicants, and their dependents become slummers. The typhoid outbreak in the Crow's Nest Pass in 1897 is now forgotten, and this summer's visitation at Cobalt and the north country is accepted as a matter of course.

If the pigs of Western Ontario develop a high death rate, however, quarantine is inaugurated, and thousands are cheerfully spent to eradicate the disorder. We pride ourselves on freedom from cattle disease. Will we ever develop a pride in Canada's freedom from smallpox, freedom from typhoid, freedom from consumption, and freedom from industrial accidents? Every town in the country has had its baptism of fire, its horrible accidents, and its deadly epidemic. If our firemen delay, if our police funk, if our veterinary inspectors neglect, there is at once an outcry; railway officials even are beginning to feel the sharp whip of the law, but our factory inspectors and our health inspectors remain obtuse through it all. Surely a "British Fair Play League" could be organized to see that the lowly immigrants who swarm in at our call and give their labor to do our work will be assured as good humane treatment, as the law assures them prompt pay.

Immigrants.—Italians, Gallacians, Swedes and British form the great army of construction work. They are hired through labor agents, whose sole object is to secure a fee for any sort of men they can smuggle through quarantine, and unload upon a contractor. Here begins our sadness. These men have passed some days awaiting work in a city. They have resided in the slums and come in contact with disease while badly nourished and badly housed, and there is no rigid contact inspection by a health officer before they are shipped into construction camps. The railway journey may be long, the food insufficient the cars crowded, foetid and comfortless, and sleep impossible. Tired and hungry the squad arrive at some small way station, they are hustled into waggons, or perhaps walk ten or fifteen miles to camp.

This is not as it should be. We have game wardens to watch

the sneaking out of deer and game along our railways, but not a soul to inspect the transport of laborers.

Arrived at camp, the men are mixed with former arrivals, some, perhaps, occupying bunks vacated by sick men, whose blankets have not even received a shaking out. It is also common for men to arrive, carrying their own blankets from other camps, which they have left owing to an outbreak of sickness.

There is no contact examination of these men on arrival, nor is there a building set apart for such as show high temperature and pulse. Fire wardens and game wardens travel these outlying districts, and cullers visit each lumber camp from week to week, but there is no health warden to examine new arrivals, quarantine suspects, inspect camps and cooking, and enforce proper disposal of waste.

The Camp.—Fair sites are usually chosen for camp grounds, but there is no health warden to say nay, if the most inopportune site is selected. Such an official, trained and instructed just as a timber culler is, could render great service to the men, the contractors and to the public, by seeing that the camp has a south exposure; that the site is high and gravelly, if practical, and near good water. They could be paid from the medical fee charged each laborer each month. This fee should rather be called a "sanitation fee," and value given the men and the contractors therefor, by a system of health wardens reporting to the provincial authorities.

The buildings should be set according to some scheme that would locate the dining and cooking camps on the extreme flank, then the sleep camp 50 to 100 ft. distant, and at least 500 ft. away from these, the horse stables. Between the stables and sleep camp should be the latrine site. In rear of the sleep camp, and at least 500 ft. distant, the quarantine and hospital tents should be set.

Buildings are now usually built of boards. If logs are used, however, they should be stripped of bark, chinked with mud and brushed inside and out with lime wash.

Meal Houses.—The dining and cooking building must be well lighted, so that dust, scraps of food and vermin cannot collect out of sight. The walls, roof and floor should be brushed with lime wash. A wash of half cement and half lime gives good results. Over each window cheese cloth or mosquito netting ought to be tacked, while each entrance is provided with a screen door arranged to close by springs or weight. These screens are most important, as they prevent the entrance of flies which carry disease both from the stables and latrine.

Tables and benches should be whitewashed, and arranged to be moved about for sweeping and washing.

The kitchen is to be separated from the dining room by a well lighted pantry, in which to keep food and dishes. Doors and windows of both kitchen and pantry are to be well protected against the entry of flies.

Dormitories.—Sleeping rooms should be removed from the meal houses, and well lighted. There should be an anteroom, in which wet clothing can be aired and dried, separated by a partition of canvas or boards from the dormitory. Off the dormitory, too, a bath room and clothes washing rooms are required. All coal-mine camps have a bath room with an attendant, who is paid by a levy upon the men, and it is not too much to expect this even in temporary camps. The walls, roof and floor should be lime washed.

Most sleeping rooms are provided with two tiers of bunks along the walls, each bunk 4 ft. 6 in. wide, to accommodate two men. A more stingy, "poverty-struck" piece of injustice was never forced on laborers. The practice of placing two men in one bunk should be prohibited and held up to derision as petty and behind the times. Fixed bunks moreover are dirty and prevent proper exposure to sunlight. Movable cots are used in barracks of all kinds, and absolute prohibition of double bunks will teach all concerned that individual canvas cots can be made and erected more cheaply. All openings require to be protected by fly screens. The rules against spitting on floors and other depravities are to be absolutely enforced by camp orderlies, and by empowering health wardens to have fines deducted from the pay of offenders.

Supplies.—The provisions used are generally of good quality, and the bill of fare includes a cereal, or mush as it is called, bacon, beef, bread, potatoes and canned vegetables, with tea, coffee and canned or dried fruits.

Cooking.—The cooking of these supplies is a most variable factor, however, due to the need of trained cooks. It is submitted that health departments could confer much advantage, both on contractors and men, by issuing a cooks' and bakers' license to such men as would qualify under a domestic science teacher. The suggested health wardens should also be holders of a cooks' and bakers' license in order to inspect intelligently and instruct if necessary.

Meat.—It should be insisted upon that all killed meat be sewn up in cheese cloth for shipment. This is done throughout the western part of the Dominion, and it rather surprises one to

see meat carried through the streets in our western cities without covering of any kind, frequently so carelessly thrown into the waggon that the wheels grind mud into projecting portions.

Milk.—Fresh milk is not usually supplied, and it is perhaps due to its absence and the abundance of fresh air and active employment that our men make such a good health showing, outside of imported epidemics.

Water.—The water supply of camps is dependent for its goodness upon the size of the stream whence it is taken. Men all realize the dangers of bad water, and it is only through ignorance that pollution takes place.

Springs form a good supply because they are covered by earth or rock, but care must be exercised to prevent impurities leaching through the covering. The quantity, especially in dry weather, is important, as good water is required not only for drinking and cooking, but also for washing dishes, for washing clothes, blankets, etc., and for washing the faces and hands. A spring should, therefore, be supplemented by a tank, say 12 x 12 x 5 ft. deep, to ensure continuity of flow, whence piping would lead to the kitchen and wash rooms. The supply from a small creek requires careful supervision, especially when it flows through flats and swamps. An elevated tank should be insisted upon with creek supply, or that from wells. The tank is filled by pumping, and in it the sediment falls either naturally, or by treatment with alum.

Some form of filter is very desirable for a camp supply, and a health warden could be trained to familiarity with the various kinds. If at all limed, the supply should be softened by the addition of soda, etc. Hard water makes a dirty wash room, as it curdles the soap.

Copper immersed in water at the rate of 5 sq. inches per gallon is said to sterilize in five hours.

Disposal of Wastes.—Latrine pits should be dug and covered with a canvas tent in such a way as to allow of the trench being fired every day in summer and occasionally in winter.

Disinfection.—The health warden and resident camp orderly should understand disinfection of buildings and wastes. Lime is probably the cheapest and best understood, but it is a little bulky for distant transportation. Whitewashing is most important.

Garbage.—All scraps of food and refuse and sweepings from the kitchen should, winter and summer, be deposited in a covered receptacle. This will prevent the hatching of house flies in the heated, decomposing material. Old bags or barrels may be used

to receive garbage, and three times a week it should be cleanly gathered and taken to a pit for burning.

The liquid wastes from the wash houses are best led to a covered cesspool where septic action will take place.

Manure.—When stables are situated with the men's quarters, a pit 5 ft. deep should be provided for manure, and, each day, earth from the excavation should be thrown in. If the stables are on a rocky site, then the manure must be hauled away to such a distance that flies will not hatch in it to infest the camps.

Prevention of Sickness.—This depends largely on a good organization, and a code of rules carried out by an orderly under the inspection of a trained health warden. The chief matters to be seen to are:

1. A contact examination of pulse and temperature of men on arrival.
2. Good food well cooked, and good water well cared for.
3. Well lighted camps with all openings screened against flies, and individual beds easily cleaned and aired.
4. Proper disposal of wastes and disinfection.

Organization.—The present provincial organization is good so far as it goes, but the writer's experience leads to the idea that a corps of trained health wardens, similar to hospital sergeants, should be formed by the Medical Health Departments of the various Provinces. These men could be trained and pass examinations in first aid, disinfecting, domestic science and hygiene, and receive licenses. The medical fee now collected from our men is quite sufficient to pay such wardens, and the laborers, the contractors and the public would receive more adequate protection.

I appeal to the Toronto Academy as the most forward body of its kind in the Dominion, to ameliorate our laborers' conditions by endorsing this movement for individual beds, contact medical inspection and health discipline.

Selected Articles.

CHANGES INDUCED IN THE BLOOD OF RABBITS BY LIVING IN AN ATMOSPHERE OF WATER GAS¹

BY GEORGE G. NASMITH, PH.D., AND F. C. HARRISON, B.A., M.B.

(From the Ontario Health Laboratories, Toronto.)

Three years ago one of us,² in the attempt to produce anæmia in guinea pigs by carbon monoxide, found that certain blood changes of rather a surprising nature were produced. Animals were placed in a chamber through which was drawn a mixture of water gas, containing about 20 per cent. of carbon monoxide and air, and they were kept continuously in that atmosphere. After a few days it was found that the number of erythrocytes in the peripheral circulation began to increase until a definite maximum had been attained, the maximum varying according to the proportion of the blood hæmoglobin saturated with carbon monoxide. Thus, when 25 per cent. of the hæmoglobin was saturated, the number of erythrocytes present in the peripheral or internal circulation was found to be 8,000,000 as compared with the normal number of 6,000,000. Other changes were also noted which were constant and definite in character.

We considered it of interest to find out whether, in the blood of animals subjected to the continuous action of water gas, hæmolysins, agglutinins or precipitins would be formed which would react with the sera and erythrocytes of normal rabbits. We also wished to see whether we could produce anæmia by means of carbon monoxide by varying the amount and method of giving the same. We selected rabbits for these experiments, as we needed to draw small amounts of blood at frequent intervals. It was, therefore, necessary to see whether rabbits would react to the carbon monoxide in the same way as guinea pigs.

Rabbits were accordingly placed in the gas chamber through which a dilute mixture of gas and air was drawn for the first twenty-four hours; a larger percentage of gas was then added, until on the third day about 25 to 33 per cent. of their hæmoglobin was saturated. If placed directly into this strength of gas they invariably died. At the end of three days profound degenerative changes were found in the erythrocytes, corresponding in detail to those found in the guinea pigs. Nucleated

¹ Received for publication, January 17, 1910.

² Nasmith and Graham, *Jour. of Physiol.*, xxxv, 32.

reds were always found, their appearance usually occurring within two days. The changes in the white blood corpuscles were also comparable to those in the guinea pig.

A rabbit (B and W) was placed in the gas chamber on January 4, 1909.

RABBIT B AND W.

Date.	R. B. C.	W. B. C.	Per cent. hæmoglobin.	Nucleated red corpuscles.
Jan. 4, '09	7,008,000	10,400	79	0
" 8, "	6,832,000	33,500	79	141 in a 500 differential count
" 29, "	10,704,000	4,600		
Feb. 2, "	10,976,000	7,300	118	1

Other animals have reacted in exactly the same way, so the red blood corpuscles of the rabbit evidently are affected by carbon monoxide in the same way as those of the guinea-pig.

Rabbits with a high erythrocyte content have also had the blood from the carotid and heart counted and the same number has been found there as in the peripheral blood. The increase, therefore, as in the guinea pig is a real increase in the production of red blood corpuscles and is not due to a mere peripheral stasis. The hæmoglobin increase, though marked, does not correspond to the rise in erythrocytes. Thus a rabbit with 11,000,000 erythrocytes only had 118 per cent. hæmoglobin; the increase in the erythrocytes being 82 per cent., while the increase in hæmoglobin was only 37 per cent. The specific gravity of the blood of a rabbit with a high erythrocyte count is greatly increased. For instance the blood of Rabbit L with 11,272,000 erythrocytes had a specific gravity of 1,072, while a normal rabbit with 6,000,000 erythrocytes had a specific gravity of only 1,051. It was found also that the erythrocytes of a rabbit with a high blood count had the same osmotic tension as erythrocytes of normal rabbits. This was shown by adding the washed corpuscles to varying strengths of sodium chloride solution. The corpuscles from rabbits with high and normal erythrocyte counts were hæmolyzed by exactly the same strength of sodium chloride solutions, so there was evidently no difference in their osmotic tension.

Taken altogether it has been found by us that rabbits living continuously in an atmosphere of water gas react in exactly the same way as do guinea pigs, and the changes as far as the red blood corpuscles are concerned are quite similar. Furthermore, the conclusion that we drew previously, namely, that the increase

of erythrocytes is due to an attempt on the part of the animal to keep its oxygen-carrying capacity constant, we believe, still holds good. We endeavored to determine whether the law of Weigert would hold under these circumstances, that is, whether animals undergoing active regeneration of red blood corpuscles would go on forming new corpuscles after they had been removed from the gas—in other words, when the stimulus had been withdrawn.

A rabbit with 11,000,000 erythrocytes per cubic millimetre was bled from the jugular vein, forty cubic centimetres of blood being withdrawn. The counts from the marginal ear vein taken at various times since the operation are given below.

Date.	Erythrocytes.	Per cent. of hæmoglobin.
Mar. 6, 09	11,512,000	120
Mar. 8, 09	8,360,000	95 two days after operation.
Mar. 10, 09	9,264,000	—
Mar. 15, 09	9,336,000	94
Apr. 1, 09	9,330,000	—
Apr. 12, 09	9,784,000	—

A second rabbit similarly treated gave the following results:

RABBIT B AND W.

Date.	Erythrocytes.	Per cent. of hæmoglobin.
Feb. 26, 09	10,976,000	118
Mar. 2, 09	9,592,000	— day after operation
Mar. 3, 09	8,040,000	92
Mar. 8, 09	9,784,000	92
Apr. 17, 09	9,596,000	87
Apr. 26, 09	7,184,000	—

From these experiments it may be seen that two days after the operation in both animals there appeared to be a diminution in the number of erythrocytes, then a rise of about a million, the total count then remaining constant for several weeks, although the hæmoglobin had fallen back to its normal amount. Other rabbits taken from the gas when undergoing active regeneration of erythrocytes and placed in air show no further increase in the number of erythrocytes. Evidently, therefore, in these cases the blood-forming organs cease to throw out large numbers of erythrocytes into the circulation, just as soon as the stimulus has been withdrawn. In other words, there is only a sufficient amount of hæmoglobin produced and distributed among the erythrocytes to carry the amount of oxygen required by the tissues. The fact that with a definite saturation of the blood with carbon monoxide there is a definite quantity of corpuscles and hæmoglobin produced for that saturation is another proof that the stimulus acts only until certain conditions for the supplying of oxygen to the tissues are fulfilled. The hydrogen, methane and carbon dioxide present in the gas mixture would all

tend to have the effect of reducing the oxygen tension in the lungs. Rabbits given the gas air mixture for three hours followed by air for three hours for periods of days or weeks reacted in exactly the same way as did rabbits living continuously in the gas air mixture.

An animal, Rabbit M, was placed in the gas mixture and kept there for four days until the blood showed a great amount of erythrocyte degeneration, with many nucleated red blood corpuscles. The animal was then operated on and blood smears taken from the carotid, splenic vein, portal vein and hepatic vein. Differential counts of these smears did not show any marked change, that is, there was no apparent difference between the blood going to and coming from the liver and spleen. Nor was there any perceptible difference between the numbers of degenerated erythrocytes going to and coming from the spleen and liver.

As it was thought possible that there might be something of the nature of hæmopoeitin present in the blood of rabbits which were rapidly producing new erythrocytes, some of them were bled to death and the serum injected into fresh rabbits which had had their erythrocytes accurately counted. In no case have we been able to demonstrate satisfactorily anything of the

DIFFERENTIAL COUNTS OF RABBIT M.

Source of blood	Pseudoeosinophils.	Small lymphocytes.	Large lymphocytes.	Eosinophils.	Basophils.	Nucleated erythrocytes met with in a 500 count.	Transitionals.
Ear	38.4	49.8	1.4	4.0	6.4	50	
Carotid	33.8	57.8	1.1	3.0	4.3	14	
Splenic vein	40.8	49.0	2.0	4.2	4.0	41	
Portal vein	47.0	42.2	5.6	2.0	3.0	23	.2
Hepatic vein	39.4	45.2	8.2	4.0	3.0	32	.2

nature of hæmopoeitin, although occasionally there has been a slight rise in the erythrocyte count; in other cases there has been a slight fall.

For example, Rabbit YF was injected subcutaneously with 25 cubic centimeters of serum obtained from a younger rabbit which had been in the gas for four days and showed marked erythrocyte degeneration with many nucleated reds present.

Date.	Erythrocytes.
June 22, 09	7,024,000—injected with 25 c.c. serum
June 23, 09	7,032,000
July 3, 09	7,296,000

These experiments also serve to demonstrate the absence of hæmolysins, for, though there was sometimes a slight reduction

in the number of erythrocytes, there was no constancy in the results obtained.

Washed corpuscles from normal rabbits were incubated with serum obtained from the blood of rabbits showing marked degeneration of the erythrocytes. Hæmolysis was never obtained in the several cases investigated, and we have, therefore, concluded that in the blood of rabbits showing severe erythrocyte degeneration hæmolysins capable of hæmolysing rabbit erythrocytes are not present. We have also tested the washed corpuscles of normal rabbits with serum from rabbits in various stages of erythrocyte degeneration and regeneration, but we have never been able to demonstrate the presence of agglutinins. Similarly, we have tested normal rabbit sera against sera of rabbits in various stages of degeneration and regeneration and have never been able to show the presence of precipitins.

The fact that we were unable to produce hæmolysis of the washed rabbit corpuscles with salt solutions of other than the strength required to hæmolyze normal washed corpuscles, although the specific gravity of the blood in rabbits with a ten million erythrocyte count was much above the normal, 1.070, compared with 1.049, seems to demonstrate the fact that the plasma of both rabbits must be of the same specific gravity. In other words the increase in the specific gravity of the blood is due to the additional corpuscles and hæmoglobin only.

CONCLUSION.

1. Rabbits living in an atmosphere of carbon monoxide react in general as guinea-pigs react.

2. The increased specific gravity of the blood in "carbon monoxide" rabbits is due wholly to the increase in the number of erythrocytes and of hæmoglobin, and not to any change in the plasma.

3. Weigert's law of inertia, that production would continue after the stimulus has ceased to act, does not hold in the case of carbon monoxide stimulated rabbits.

4. Hæmolysins, precipitins and agglutinins towards normal rabbit corpuscles and sera were not present in carbon monoxide rabbits.

5. "Hæmopoeitin" or anything of a similar nature was not found in rabbits in any stage of erythrocyte degeneration or regeneration.—*Journal of Experimental Medicine*.

THE PSYCHOLOGICAL IMPORT OF THE DOCTRINE OF IMMUNITY

BY CHARLES J. WHITBY, M.D. (CANTAB.).

Perhaps few of us realize the full significance of the recent emergence of a therapeutic doctrine which bids fair to transform our whole attitude towards the problems involved in the treatment of disease. For the first time since the world began we find ourselves in possession of a conception, which not merely throws a startling light upon the dark mysteries of pathological processes in general, but has obvious analogical bearings upon the subject-matter of other sciences, in particular of psychology. It would hardly be going too far to assert even that, in the theory of immunity, if it should, as there is little reason to doubt, be confirmed and extended, we have the germ of a new *philosophy* of human nature, one which differs from all its predecessors, moreover, in that it was conceived not in the brain of some speculative bookworm, but inductively and in response to the need of some interpretation of authentic facts of experiment and observation. It should also be noted that the theory of immunity is not the product of any one mind: it arose, as it were, spontaneously out of the co-operative researches of a number of workers, beginning with Jenner's empirical discovery, attaining a rational basis in the life-work of Pasteur, and culminating, for the time being, in the subtle and elaborate formulation supplied by Ehrlich. It is obviously, therefore, no ephemeral mushroom growth, but a genuine working hypothesis, solidly based on innumerable clinical observations, to say nothing of the beautiful experiments which are being specially directed to the elucidation of its complexities and side issues.

The theory of immunity in its narrowest and strictest sense refers mainly, if not exclusively, to the processes involved in reaction against, and recovery from, specific infections of bacterial origin. Obviously, however, its implications carry the mind, which has once assimilated its central idea, much further than this. It is impossible to doubt that many other poisons besides those toxins arising from the presence of the specific micro-organisms can evoke reactions of an analogous nature to those whose result is the production of antitoxins, properly so-called. The widespread popular belief that medicines regularly administered over a prolonged period "lose their effect" may not be altogether unfounded, and is an obvious case in point.

Those who remember the horrible sensations ensuing upon the smoking of their first pipe of tobacco—I will contrast them with the mild and pleasurable response of their now seasoned nervous system—will hardly dispute the plausibility of a belief in a nicotine immunity dependent upon the presence in their blood of a nicotine antitoxin. Further illustrations of this wider conception of immunization are found in the extraordinary resisting power against such poisons as opium and arsenic, which, as we all know, can be acquired by those addicted to the abuse of such poisons.

Side by side with our increasing knowledge of the mechanism of immunization against specific infections, we have recently been learning a great deal about the *rôle* of internal secretions in regulating the various functions, and maintaining, by their balanced and mutually reacting stimulus, the general health of the organism. Here, as it seems, we have, yet again, a clear indication that the conception of immunity needs to be considerably broadened beyond its original and strictly technical signification, so as to include many of the facts revealed by the study of these autogenous toxins and antitoxins, for as such they may clearly be regarded. It is more than a mere surmise that many of the symptoms of such diseases as rickets and exophthalmic goitre—to name only two of many possible examples—are due to impairment of that balanced activity of opposed gland structures, whose products, in health, function as toxins and antitoxins. Of two such glands, or groups of glands, one gets the upper hand, the other fails to respond in normal fashion or degree. The result is an excessive and one-sided elaboration of a toxin whose normal antidote is relatively deficient, and a whole train of symptoms directly traceable to the effects of the said toxin. In health we may be said to enjoy immunity against the poisons whose elaboration within our own organs is necessary to the activity of those or other organs; in disease this immunity, through disturbance of balance, is lost or impaired. Restore the balance by administration of the defective agent and you will relieve all the symptoms, just as, by the administration of an antitoxin, you relieve those of a specific infection. And, by ensuring a needed rise to the faulty organ, you may thus in time effect a radical cure.

Mr. Ernest Stratford has recently reported several cases of appendicitis and oöphoritis associated with symptoms closely resembling those of Graves' disease.

Here, it seems to me, we have important clinical confirmation of the reciprocity of action of the thyroid gland on one hand,

and the ovaries on the other, suggested by the temporary hypertrophy of the former, which occurs in many women at the menstrual period.

The special object of the present article, to which the above remarks form a necessary introduction, is, however, to suggest that the theory of immunity in its wider acceptance may assist in the physiological interpretation of many familiar facts of our emotional and mental development. If one reviews the entire life-history of a normal individual, one will find that it divides up into a series of distinct phases, each differing from its predecessor in several important respects, but mainly in this, that some special veil of illusion, based upon a corresponding emotional *susceptibility*, has been permanently removed, or, at least, greatly thinned, so that the intellectual outlook has gained more objectively, more power of disinterested survey, more detachment from and independence of organically determined moods. Thus at one period of his career, probably that of and following adolescence, he will be constantly "falling in love," and all his views of life will be colored, consciously or otherwise, by a glamor of sexual illusion. The physical determinant of this malady—for who can doubt that love is a pathological state or analogue?—will no doubt be the pouring into his circulation of neurotropic toxins of testicular origin. And the time will possibly come when recovery from such a state, supposing that circumstances rendered the normal elimination of the sexual virus inconvenient or socially deleterious, may be expedited by the administration of an anti-erotic serum! Later, perhaps, the same individual may become obsessed by an hypertrophied sympathy with the victims of unavoidable social imperfections, and may feel strongly drawn to some one of the many fanaticisms which, in their extreme form, as seen in "cranks" of various kinds, constitute veritable diseases. Immunity from the subtle virus of a fanaticism is, generally speaking, a somewhat slow and tedious process, although, naturally, the power of reaction varies enormously in different individuals. In general, perhaps, it will be established, more or less critically, at or about the age of forty-five, when a certain hardening of conscience and the establishment of more virile views of life and reform are, I believe, the rule. Mr. G. B. Shaw doubtless had this moral climacteric in view when he composed an aphorism to the effect that "every man of forty is a scoundrel!" When, however, as is unfortunately too common, the power of reaction against the views of humanitarianism (considered as a disease) is altogether lacking or greatly deficient, the individual will tend towards a state of

hopeless despondency, and may become a pessimist, if not a melancholiac.

It may appear somewhat far-fetched, to those, at least, who are unaccustomed to the interpretation of psychical states in terms of physical function, to speak of an obsession by some fanatical or Utopian delusion, born of exaggerated social sympathy, as a disease, and to seek to account for it by an auto-intoxication by some subtle virus, affecting the nervous or cerebral tissues in some specific way. But all alienists admit the importance of the toxic element in epilepsy and acute or chronic mania, and the difference is only one of degree. Philosophically speaking, it is obvious that, so long as a man's moral and intellectual progress continues, every outgrown phase may be regarded as pathological when compared with the saner and more advanced phase which succeeds it. And, unless we are to revert to the dualism of pre-scientific psychology, we must admit that, side by side with intellectual and moral progress, there is a corresponding modification by the chemico-vital processes of the body. I submit that a reasonable explanation of the observed fact that life tends to divide itself up into a series of distinct psychic cycles is the following: Every period of life is characterized by the dominant activity of one or more organs, whose internal secretions constitute neurotropic toxins affecting the nervous system (consequently the emotions) in some characteristic way. The presence in the circulation of these toxins acts, however, as a stimulus to the activity of another organ or group of organs destined to dominate during the succeeding phase of development. This stimulus evokes from the organ or organs in question the elaboration of internal secretions antagonistic to those in possession of the field, the elaboration of what are virtually antitoxins in relation to these. Thus, in the course of years, a condition of *immunity*, more or less permanent and complete, to the first set of toxins is established; and the individual, *experiencing a change of mood* for which he is probably unable to account, enters upon a new phase of life, psychical as well as physiological.

As my aim here is rather to suggest what I feel sure will prove a fruitful field of observation than to anticipate in detail its results, I will not presume to define the typical life-phases of an average individual. Everyone who has reached middle age must realize, on looking back over his career, the differences of *mood* peculiar to different phases of his own development. And on reflection he will find, as a rule, that each of these moods is, *upon the whole*, related to its predecessor in somewhat the same

way as a state of convalescence to one of suffering or disease. To this rule there will naturally be many exceptions, for the disturbing effect of environmental influences may greatly modify or even reverse the order of events. But this does not affect the force of my contention that the theory of immunity, widely interpreted, has genuine psychological significance, and throws a strong light upon the nature of certain facts of human development hitherto but little understood.

A question which naturally arises, granting the justice of my general view, is, whether the process of self-immunization against autogenous toxins prejudicial to complete sanity proceeds continuously throughout life, so that a man's lucidity grows even in old age, or not. Old age is no doubt very commonly, but, I believe, not necessarily, associated with intellectual decline. Many great writers and artists have produced their best work quite late in life. Much may be forgotten, but the value of what is retained seems to be in some way or another mysteriously enhanced. The brain of a healthy old man may be conceived as immune to the perverting effect of all autogenous toxins, while not insusceptible to their influence as mild and healthful stimuli. Such a brain will belong to a man capable of entering into the moods of all younger man, without being carried away by any of them. It will be what, in popular style, is happily entitled a "*seasonal*" brain; and the mind that corresponds therewith will be one that we can call in the truest sense "*disillusioned*."
—*Folia Therapeutica*.

OPHTHALMOLOGY AT OXFORD

Oxford University has the honor of being the first corporate body to grant a diploma in ophthalmology. The first examination for the diploma will be held in the third week of July of this year. Residence in Oxford is not required, but, amongst other things, certificates must be obtained that the candidate has satisfactorily followed out in the University of Oxford courses of instruction on the anatomy, physiology, and diseases of the eye. Arrangements are not yet completed for giving these courses of instruction as fully as it is intended they shall be given in the future. The course for anatomy and physiology extends over two months, that for diseases of the eye over three months, but the course of lectures in this subject will be given in the two months corresponding to those in which the physiological and anatomical lectures are delivered. The remaining month of clinical work can be kept at any other time.

The certificates of satisfactory attendance are obtained from those who are responsible for the teaching of the subjects; the requirements from those who are obviously experienced surgeons would probably not be so exacting as from others.

The Reader in Ophthalmology (Mr. R. W. Doyne) has issued the following circular to clinical teachers:

"In connection with the diploma there is now arranged at Oxford in the Departments of Anatomy, Physiology and Ophthalmology a course of instruction to take place during the eight weeks of the summer term. But apart from this it is my desire to organize during this term annually a course of systematic instruction in ophthalmology that shall be the best of its kind. This year advanced lectures during one week have been arranged. I hope that before long a suitable fabric may be endowed and fitted with all the apparatus pertaining to ophthalmology for private study as well as systematic teaching.

"The department does not propose to deal with clinical teaching; that is excellently done in various centres throughout the country, but it is hoped that the value of a place fitted with all the requirements for systematic teaching and study will be recognized as a valuable adjunct to what is of course the more important consideration, that of clinical work. There is not, I believe, at the present time in this country any such special provision, and it has to be sought abroad by those who require it.

"Further, it is hoped that when funds permit of the employment of a skilled pathologist, the pathological work of those eye hospitals and departments which have not a pathologist of their own, may be undertaken, and the specimens be prepared, exam-

ined, and returned with reports to the hospitals to which they belong. In this way a large amount of valuable pathological material which is now wasted may be utilized, and each hospital have its own museum. It may be remembered that the late Sir B. Sanderson was very much in favor of such an arrangement.

"A great opportunity now presents itself, and I wish to be especially careful to avoid taking any step or doing anything in the matter that might be prejudicial to its success. Such a scheme cannot possibly succeed unless it receives the active support of the clinical teachers of the United Kingdom, and it is my desire to organize the generous support they may be disposed to give, more especially in the way of lectures. I shall be grateful for any advice or criticism, for I wish to support the English School of Ophthalmology, and in no sense to enter into competition with any of the excellent work that is being done."

The annual Congress of Ophthalmic Surgeons is announced to assemble at Keble College, Oxford, from July 20th to July 22nd. One hundred and fifty rooms will be available in Keble College for the first applicants, and will be allotted in order of application. The following are the members of the Council: Dr. Darier, of Paris; Professor Dufour, of Lausanne; Professor Greeff, of Berlin; Dr. Wendell Reber, of Philadelphia; Sir Anderson Critchett, Bart., Sir Henry Swanzy, Messrs. Brailley Browne, Collins, Cross, Doyne, Lawson, Mackay, Priestley, Smith, Ramsay, Sandford, Stephenson, Walker, Werner. Sir Anderson Critchett is honorary treasurer, Mr. R. W. Doyne, Master, and Mr. Sydney Stephenson, Honorary Secretary. About 120 names have already been received as foundation and original members of the Congress, and Mr. Sydney Stephenson, 33, Welbeck Street, W., will receive further names of original members until June 24th. There is no annual subscription, but half a guinea entrance fee and half a guinea on each occasion that a member shall attend the Congress. The programme of the Congress is not yet completed. It will be sent out later to those who have sent in their names for membership. The special features of the Congress will be operations for cataract and glaucoma. Operations will be performed by, amongst others, Professor Lagrange, of Bordeaux; Professor Holth, of Christiania; Professor Heine, of Kiel; Colonel Herbert, of Nottingham, who will each perform his operation for glaucoma. Sir Anderson Critchett will operate for cataract, and Major Gidney will perform the intracapsular cataract extraction practised by Major Smith. It is not proposed to have papers and discussions, but a series of demonstrations and exhibitions.—*The Birmingham Medical Review.*

Editorials.

THE KING'S DEATH

We learn from the various journals that, notwithstanding the rumors which were circulated during his late Majesty's illness, there was nothing mysterious about the cause of his death. For many years the physical condition of His Majesty was in certain respects unsatisfactory. He never quite recovered from his serious operation in 1902. For years he suffered to some extent from emphysema, with occasional attacks of bronchitis and laryngitis. The reports cabled about the serious condition of his throat during the twenty-four hours before his death were not correct. He had a somewhat serious attack of laryngitis, which produced slight painful spasms to the vocal cords, but there was nothing else present with the exception of inflammatory thickening of the hinder part of the glottis and chronic catarrh of the throat, or what is known as "smoker's throat."

The *British Medical Journal* states: "It was a case of a type to be seen every day in dozens of elderly persons. The cause of death in such cases is purely mechanical, the overburdened heart being stopped by the increasing resistance in the lungs. Could the king have been induced to spare himself more he probably would have lived many years longer. He had indeed suffered from glycosuria of a varying degree for a long time, but this did not, so far as could be judged, tend to shorten his life."

His Majesty appeared to derive much benefit from his visit to Biarritz, and it was exceedingly unfortunate that he should have considered it his duty to go back to London when he did, returning from the sunny South to the cloudy skies and the cold east winds of an English spring.

PARENT AND DOCTOR

Too often when the subject of the medical inspection of schools comes up it is taken for granted that the parent will be an obstacle to this work. In an article under the above heading

appearing in the April number of "School Hygiene," of London, England, it is pointed out that the very reverse is the case. Parents help. The article concludes with the saying of Samuel Butler that the well-being of the children of the people is the highest good. "Towards this all government, all social conventions, all literature, art, science should directly or indirectly tend. Holy men and women are those who keep this unconsciously in view at all times, whether of work, or of pastime."

The same article states that in England the intimation that parents will be welcome when the children are examined by the school doctor has been accepted by from 60 to 90 per cent. of parents, who have often come, especially in the cases of working-women, at great inconvenience and loss of time. But it is not only the working classes who should attend and whose children should be seen to. The writer of the article agrees with Dr. Catherine Chisholm, who stated that she "considered inspection of the children in the high schools quite as important as among the children of the poorer classes."

We cannot quote further from an article the value of which is apparent, but must content ourselves with drawing the attention of our readers to the magazine itself. "School Hygiene" is published at 2 Charlotte St., London W., at 7s. 6d. per year. The editor is Dr. Eder, and the magazine really stands alone as the only good magazine of its class in English. It is an excellent journal and well worthy of being kept on file, as it is full of valuable information.

ANNUAL MEETING OF THE ACADEMY OF MEDICINE

The annual meeting of the Academy took place in the Academy Building on the 3rd of May and was well attended. Men distinguished in particular branches of medicine and surgery—Doctors Hoover, Maurice Richardson, L. S. Barker, W. S. Thayer and John Lovett Morse—were the guests of the Academy during the session and made the general meetings of great interest. Many of the fellows, however, appreciated more the smaller meetings of the sections on account of the exhibition of

cases and the freer discussions which took place at them.

The Toronto profession should, and no doubt does, value the Academy as an educational and harmonizing factor in its midst, and everyone should unite loyally in its interests and in promoting its usefulness. There is a great future before it.

By careful management of the funds, the trustees have a reserve at the credit of the Academy of some \$11,000, and expect shortly to announce the conclusion of negotiations for the erection of a permanent home for the Academy. This, too, it is hinted, may be done without touching the reserve mentioned above.

The financial statements of the trustees and treasurer and the report of the library committee are to appear in pamphlet form, and a copy will be mailed to each of the Fellows. The library contains about 6,000 bound volumes and receives 145 periodical publications. The report of the committee contains a request for donations of medical literature of all kinds. No doubt there is much valuable material throughout the country, hidden away in attics and dark recesses, which might well be sent to the Academy. We commend the suggestion to our readers.

The personnel of the new Council is as follows: President, Dr. Albert A. Macdonald; Vice-President, Dr. N. A. Powell; Hon. Secretary, Dr. W. Harley Smith; Hon. Treasurer, Dr. W. A. Young; Past Presidents, Dr. A. McPhedran, Dr. James F. W. Ross, Dr. R. A. Reeve, Dr. W. H. B. Aikins, Dr. H. J. Hamilton, Dr. Edmund E. King, Dr. J. Milton Cotton, Dr. D. J. G. Wishart.

Chairmen of Sections: Medicine, Dr. John Ferguson; Surgery, Dr. A. H. Perfect; Pathology, Dr. R. D. Rudolf; Ophthalmology, Otology and Laryngology, Dr. J. Price Brown; State Medicine, J. F. Goodchild; Pediatrics, Dr. W. B. Thistle.

ITEM

The Medical Society of the State of New York held a reception on the evening of May 6th at the New York Academy of Medicine in honor of Dr. Abraham Jacobi, to celebrate his 80th birthday.

Personals.

Dr. F. A. Clarkson, of College St., is now in Vienna for special work in internal medicine.

Dr. Henry Orton Howitt, of Guelph, was married to Miss Amy Saunders, of Toronto, April 20th.

Dr. J. Cameron Wilson, son of the late Dr. J. D. Wilson, was on graduating appointed resident surgeon to Victoria Hospital, London.

Dr. J. Orlando Orr, manager of the Industrial Exhibition, Toronto, was married to Miss Anna Marie Halbaus, of Toronto, formerly of Berlin, May 16th.

Dr. A. S. Moorehead (Tor., '07), of Toronto, passed the first professional examination in Anatomy and Physiology for the Fellowship of the Royal College of Surgeons.

Miss Florence Nightingale, "the Grand Old Lady of London," celebrated her 90th birthday May 8th. Although Miss Nightingale has been confined to her home in London for the past fifteen years on account of ill-health, she still takes a deep interest in nursing and all matters affecting the public health.

Dr. J. A. Robertson, of Stratford, returned from the West Indies early in the spring. Shortly after his return he had an attack of his old enemy, la grippe. He appeared to be recovering nicely at the end of a week and went out in his motor car for a short run, and, after calling on a patient, he started for home. He turned the crank to start the machine, but had, however, forgotten to move a certain lever, and the crank flew back, striking him on the wrist and causing rather a bad fracture. He suffered considerably from shock, but reports as to his condition about the middle of May were encouraging.

GREATER BRITAIN AND THE ANNUAL MEETING, 1910

COLONIAL RECEPTION COMMITTEE.

SIR,—The Colonial Reception Committee is particularly desirous of bringing the Annual Meeting, to be held in London

in July next, to the notice of all medical practitioners residing in the Dominions beyond the seas, as affording them an unusual opportunity of visiting London, both for the scientific purposes of the meeting and also for social intercourse with their fellow practitioners throughout the Empire.

The Colonial Reception Committee, in conjunction with the Colonial Committee of the Central Council, desires, through the medium of the Journal, to extend a very cordial invitation personally to all medical practitioners in the Colonies, and assures them of a hearty welcome to the Annual Meeting and to the capital of the Empire.

Great efforts are being made by these two committees to arrange such entertainments as it is hoped will meet with the approval of their colonial brethren and so add to the success of the meeting of 1910.

We are, etc.,

EDMUND OWEN,
Chairman,

DONALD ARMOUR,
Honorary Secretary,

of the Colonial Reception Committee.

429, Strand, W.C., Jan. 3rd.

Obituary.

SOLOMON SECORD

Dr. Secord, a well-known physician of Kincardine, died at his home in that town April 24th, aged 76. He was born near Hamilton and belonged to the family which included the heroine, Laura Secord. He graduated M.D. from Victoria University in 1856. After practising for a time in Walkerton and Kincardine he went to the Southern States in 1861 and became a medical officer in the Southern army and served during the whole of the rebellion. After the war he returned to Kincardine and remained there until the time of his death.

JOHN DOLWAY WILSON

We deeply regret to announce that Dr. John D. Wilson, of London, one of the best-known physicians of Western Ontario, died at his home May 16th, aged 52. About five weeks previous to his death he became infected while operating on the tonsils of a little girl. Symptoms of septicæmia soon appeared, and in a very short time his case was considered hopeless. In a couple of weeks, however, he rallied to some extent, and for a time his recovery seemed possible if not probable, and the day before his death his attending physicians felt greatly encouraged, but a sudden change occurred and this well-beloved and accomplished physician passed to rest. Dr. Wilson not only had a large practice, but took a very active part in public matters. He was Mayor of London at a very critical time, during the celebrated street car strike. He was president of the Irish Benevolent Society, and took an active interest in the Western University. He was the chief organizer of the Victoria Hospital of London. He was greatly interested in the treatment of patients suffering from tuberculosis, and especially the sick poor. Dr. Wilson was a very fine type of the hard-working, conscientious physician. His fellow-citizens followed his case with the deepest interest until the announcement of his death cast a gloom over the whole city. We think we may fairly claim him as another Dr. McClure. He leaves a widow and six children, who have the profound sympathy of the community.

Book Reviews.

A PRACTICAL TREATISE ON DISEASES OF THE SKIN. For the use of students and practitioners. By James Nevins Hyde, A.M., M.D., Professor of Dermatology in Rush Medical College, Chicago; Professorial Lecturer on Diseases of the Skin, University of Chicago; Dermatologist to the Presbyterian, Michael Reese, Augustana and Children's Memorial Hospitals and the Orphan Asylum of the City of Chicago; Member of the American Dermatological Association; Corresponding Member of the Societe Francaise de Dermatologie et de Syphiligraphie; Corresponding Member of the Wiener Dermatologische Gesellschaft, and Corresponding Member of the Dermatologische Gesellschaft, and Honorary Member of the Societa Italiana di Dermatologia e Sifilografia. Eighth and Revised Edition. Illustrated with 223 engravings and 58 plates in colors and monochrome. Philadelphia and New York: Lea & Febiger, 1909.

The Eighth Edition of this work, which is of exceptional excellence, has undergone careful revision, and may be considered easily the leading work published on this continent on diseases of the skin. The diseases of warm countries and the tropics are considered in a separate chapter. New articles have been written on the following subjects: Prurigo, Nodularies, Paraffin, Prosthesis, Osteoma and Calcification of the Skin, Meralgia Paraesthetica, Acrodermatitis, Pustulosa Hiemalis, Lichen Spinulosus, Keratolysis Exfoliativa Congenita, Limpoma, Fordyce's Disease, Causalgia, Leukæmia and Pseudoleukæmia Cutis, Tinea Ciliorum, and, in particular among the disorders produced by animal parasites the important subject of Brown-tail Moth Dermatitis.

We had hoped to see a fuller account of the value of radium in keloids, rodent ulcers and naevi.

The work throughout is most beautifully illustrated and the chapters are well arranged. It is difficult to criticize a work which merits unstinted praise.

NEW AND NON-OFFICIAL REMEDIES. Containing descriptions of the articles which have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association prior to Jan. 1, 1910. Chicago: Press of American Medical Association, 535 Dearborn Avenue. 1910.

HANDBOOK OF DISEASES OF THE EAR. For the use of students and practitioners. By Richard Lake, F.R.C.S. (Eng.); Surgeon Diseases of the Ear, etc., London School of Clinical Medicine; Surgeon Royal Ear Hospital. With 4 colored plates and 66 original illustrations. Third edition. London: Bailliere, Tindall & Cox, 8 Henrietta Street, Covent Garden, 1910.

This work continues to be popular with the profession, and is one of the best on the subject. The third edition has been somewhat modified and improved. The chapter dealing with Intercranial Complications is particularly lucid, and the chapter on Diseases of the Middle Ear shows the master hand.

MANUAL OF DISEASES OF THE EYE. For students and general practitioners. By Charles H. May, M.D., Chief of Clinic and Instructor in Ophthalmology, College of Physicians and Surgeons, Medical Department, Columbia University, New York, 1890-1903; Attending Ophthalmic Surgeon to the Mt. Sinai Hospital, New York; Consulting Ophthalmologist to the French Hospital, to the Gouverneur Hospital, to the Red Cross Hospital, and to the Italian Hospital, New York. Sixth Edition, revised. With 362 illustrations, including 22 plates with 62 colored figures. Price, \$2. New York: William Wood & Co. 1909.

This popular work, which appeared first in August, 1907, is now in its seventh edition, which is a sufficient evidence of its great worth. So much has it been appreciated that it is now published in seven different languages, German, Italian, French, Dutch, Spanish and Japanese.

New paragraphs have been added on subjects such as Tuberculin Tests, Cerebral Decompression and Transillumination.

HIGH FREQUENCY ELECTRICAL CURRENTS IN MEDICINE AND DENTISTRY Their nature and actions and simplified uses in external treatments. By S. H. Monell, M.D., New York; Professor of Static Electricity, International Correspondence Schools, 1898-1903; Founder and Chief Instructor, New York School of Special Electro Therapeutics, 1896-1902; Member of the New York Academy of Medicine; Editor Journal of Treatment 1904-1905; Author of "A Pictorial System of Instruction for Physicians in X-Ray Methods and Medical Uses of Light, Hot-Air, Vibration and High Frequency Currents," Manual of Static Electricity in X-Ray and Therapeutic Uses, Etc. Finely illustrated with special instruction

plates. New York: William R. Jenkins Company, 851-853 Sixth Ave. 1910.

Interest begins in the first chapter, in which electricity and its mysteries are defined. This is conspicuous in the section, "Life Phenomena and Electricity," which tells what science has found out about how nature works in the human body. Then follow two chapters on Physiologic-Medical Properties of High-Frequency Currents.

"High-Frequency Currents in Medicine and Dentistry" was written to assist the progressive surgeon, physician and dentist, and for all who have electricity in their homes.

Selections.

Treatment of Delirium Tremens

Some novel suggestions for the treatment of delirium tremens are those of G. E. Pettey, who ascribes the symptoms of this condition to the accumulation of toxic products, autogenous as well as alcoholic, in the blood. Accordingly, he aims at the removal of these deleterious substances. He gives normal salt solution in large quantities by the rectum, hypodermically, or, if necessary, intravenously. Thus the entire circulatory system is flushed with fluid to its utmost capacity, and this is then relieved by free purgation with large and repeated doses of Epsom salt. Calomel in full doses is also given. Sparteine is administered in 2-grn. doses for the purpose of supporting the heart and promoting diuresis. For the delirium itself gelsemine is given every hour, or every two hours, until its physiological effect is produced; the dose advised is $1/25$ grn. Alcohol is reduced to moderate limits, but is not entirely withdrawn: opium and other narcotics are condemned as not merely dangerous but useless. Physical restraint is also held to be not permissible. In 450 consecutive cases the results of this line of treatment are described as excellent, and no death from delirium tremens occurred in the whole series.—*The Hospital*.

Phenolphthalein

J. J. Gilbride, of Philadelphia, says that phenolphthalein was first introduced into medicine through the discovery of the purgative effects of artificial Hungarian wines which had been treated with it to prevent their substitution for the genuine article. This led to a careful examination as to its action on the bowels, and it was demonstrated by Vamossy that it invariably acted as a purgative. This fact led it to be quickly taken up and used under various names in proprietary medicines. Vamossy explains its action by its remaining unchanged in the stomach and being converted into a sodium salt in the intestines, more soluble and more active than the original drug itself. It has been further investigated by Ott, Scott, Tunnicliffe, and others. Clinical experience has confirmed their investigations and shown that it is a safe cathartic. It usually acts without pain in six hours, and is not followed by later sluggishness of the bowels. According to Gilbride's experience, it loses its effect somewhat

by continued use, but a dose of from 3 to 5 grn. will purge the average patient. Gilbride thinks that 5 grn. should be the limit of the dose, as some persons possess an idiosyncrasy for the drug, and for a child he would begin with a small dose, say $\frac{1}{2}$ grn., given at night. He recommends its introduction into the Pharmacopeia.—*Jour. A. M. A.*

Calcium Lactate in Eclampsia

A. C. F. Halford, of Brisbane, Australia, treats eclampsia and eclamptic symptoms, as well as the albuminuria of pregnancy—which, in his opinion, may be also due to paucity of calcium content of the blood—by the administration of calcium salts in generous doses. He believes he has averted eclampsia by following this procedure. Calcium lactate was the salt employed, both on account of its readily assimilable nature and because it is an organic compound. The dosage was 15 grn. every four hours until symptoms abated, and then less frequently.

In dangerous cases of eclamptic convulsions the author recognizes that to give calcium by the mouth would be too slow a method, and in such cases he recommends the injection intravenously of a liter of warm saline solution containing about 10 grn. of calcium lactate.—*Australian Med. Gazette.*

Cardiac Dropsy Relieved by Digipuratum and Diuretin

William H. Smith reports the case of a man of sixty-seven, with an unimportant family and previous history, who entered the Massachusetts General Hospital. For six months he had had gradually increasing dyspnoea, dizziness, and swelling of the legs; for five months he had had orthopnoea, cough, and at times blood-tinged sputum; for two months dull pain had been present in the left chest, while for five weeks there had been oedema and swelling of the genitals. The dyspnoea and orthopnoea were extreme the three days before entrance.

Examination at the time of entrance, Oct. 24, 1909, showed a well-developed and nourished man, with arterio-sclerosis, with marked failure of compensation, hydro-thorax, ascites, liver engorgement, and brawny oedema of the legs. The urine was that of passive congestion, the blood normal, the blood-pressure 185. Temperature, 94.6°; pulse, 95; respiration, 50, at entrance.

He was put at once upon digipuratum, four tablets, each of $1\frac{1}{2}$ grn., the first day; three tablets the second and third days; and two the two following days. His urine, which had been relatively small in amount, rose the fourth day to 190 oz. in the twenty-four hours. There was very marked improvement in his condition, the œdema of his legs disappeared, and the heart sound became louder, although there was little change in the rate. Unfortunately, it cannot be definitely stated that such rapid and marked improvement was due to digipuratum alone, as he was put upon diuretin, 15 grn., every four hours, two days before the marked diuresis occurred. The striking thing is that in a case of sensile heart with failure of compensation existing for months such a rapid improvement should occur, whether due to the digipuratum alone or in combination with the diuretin.

He was discharged relieved Nov. 8. It is important to remember that, in order to maintain compensation in these cases, some preparation of digitalis must be used for a considerable time after compensation has been established.—*Boston Med. and Surg. Jour.*

Dionin in Chronic Atrophic Rhinitis and Chronic Dry Pharyngitis

The seemingly wonderful results accomplished by the use of dionin in diseases of the eye led D. D. Wilcox, of Petersburg, Va., visiting oculist and aurist to Petersburg Hospital, to employ dionin in the treatment of a case of chronic atrophic rhinitis and in a case of chronic dry pharyngitis.

The atrophic rhinitis was well developed in a young girl eighteen years old. She stated that the trouble had been noticed about two years and had gradually become worse.

The writer directed her to come to his office, where, tri-weekly, he cleansed the nasal membranes and post-nasal space of all dried tenacious secretions, and then thoroughly sprayed the parts with a 2 per cent. dionin solution. She was also given a spray of boric-acid solution to be used three times daily at home. In addition she was given strychnine, phosphoric acid, and iron for her general condition. The first effect of the dionin was just as is seen in the eye, producing a well-marked œdematous appearance of the entire mucous surface. This, she said, lasted the entire night and, as she expressed it, made her have a bad cold without having to blow the nose. It was with difficulty that the writer persuaded her to let him continue the treatment, she preferring the large breathing space to the obstruction.

He is now able to report the case as cured after three months of ceaseless treatment.

The case of dry pharyngitis was in a man, aged forty-five. The dionin was applied on a cotton applicator at the office every other day for a month, after which time he did not return, but, when seen on the street a short time afterward, he said that his throat has never since troubled him.—*Virginia Med. Semi-Monthly*.

Death Some Days After Chloroform

Aubertin (*Sem. med.*) mentions the fact that some cases, apparently quite free from any hepatic or renal mischief, die between the second and fifth days after surgical interference under chloroform, generally without jaundice, and that in such cases degenerative and necrotic lesion of the liver are discovered *post mortem*. These hepatic lesions have been attributed to appendicitis, to the abuse of antiseptics, etc., but it is probable that the chloroform always plays an important part in their production, and it is nearly certain that in many cases it is the only cause. Aubertin, in fact, has succeeded in producing, in healthy animals, delayed death after a single production of chloroform anæsthesia, and has found in such circumstances two varieties of lesion; visceral changes affecting chiefly the liver, and general congestive and hæmorrhagic phenomena. It may be that the hæmorrhagic changes are partly caused by hepatic insufficiency; but in any case it is interesting to see that chloroform anæsthesia can by itself cause delayed death from hepatic insufficiency, accompanied, not by jaundice, but by hæmorrhagic symptoms.—*British Medical Journal*.

Famous English Physicians

Mr. George W. Smalley, in contributing the series of Anglo-American Memories to *The Tribune*, recently discoursed interestingly of three famous English physicians. We feel sure our readers will enjoy these anecdotes, and that Mr. Smalley will pardon us for reproducing them. They deserve preservation in medical literature and to be incorporated in the biographies of these celebrated medical men.

SIR THOMAS BARLOW.

Coming to England in the summer of 1896 on a holiday, I

had some slight illness and asked a friend whom I should consult. My own doctor was by that time attending patients, I suppose, in another and better world. My friend said he had lately seen fourteen physicians about his son, and each of the fourteen had given a different name to his son's disease.

Then I went to Dr. Barlow, who said, after a long examination, "I do not know what is the matter with your son nor what to prescribe for him." Then I felt I had found a doctor whom I could trust.

So I went to Dr. Barlow, without an introduction. At the end of a rather long consultation and a definite opinion and a settled prescription, I asked what his fee was.

"Nothing."

I thought he had misunderstood my question, and repeated it.

"Nothing. I can take no money from a man who has done as much as you have to keep the peace between the two countries."

When I next saw the manager of *The Times* I told him of this incident, which he seemed to think interesting. He said:

"Such evidences of good feeling from a man so distinguished as Barlow and so far removed from politics do indeed make for good feeling on both sides. I hope you will tell all your own people."

It is difficult, for I cannot tell it without more or less directly paying a compliment to myself. But many years have since ebbed away. Modesty is at best but an inconvenient hand-maiden, from whom I would part company if I could. Let her keep to her proper place. An obligation of honor is peremptory; and this, perhaps, is one. I did tell a certain number of friends at the time, and now I repeat the anecdote to a larger number. I set it against Mr. Price Collier's mischievous dictum that English and Americans do not like each other. The dictum already seems to belong to a distant and misty and mythical past.

Since that year of 1896 Dr. Barlow has become (in 1902) Sir Thomas Barlow, Bart., and Physician to the King's Household—about as high as anybody can go in the medical profession. A Lancashire lad to begin with, he has had a vast hospital experience, and still keeps up his hospital work; he has a vast private practice; Harvard and two Canadian universities have give him their LL.D.; he is an F.R.S., a K.C.V.O., and other parts of the alphabet pay him tribute. All these and many other titles and distinctions have their value, though the late Sir Henry Drummond Wolff, who had more than most men, did say: "They give me every kind of letter to my name except L.S.D." But

the essential thing in Sir Thomas Barlow's case is that he has the confidence of the public and of his profession.

Sir Thomas was one of the medical advisers of the King at the time of the operation for appendicitis by Sir Frederick Treves. Those were critical and fateful days, about which many legends have since grown up. The one I like best has nothing to do with Sir Thomas Barlow, nor have I ever asked him whether it is true, nor would he tell me if I did. But even a legend may be true, and this I believe is.

SIR FREDERICK TREVES.

Sir Frederick Treves, in one of the quaint phrases of the older days, Serjeant-Surgeon to the King, and reckoned, perhaps, the most brilliant operator of his time, was summoned to the King on a Monday in June, 1902. He made his examination and told the King there must be an operation on the following day. The right technical name for the King's malady is not appendicitis, which has become a household word, but perityphlitis. The King assented in principle to the operation, but said to Sir Frederick Treves it could not be performed before Wednesday. Answered Sir Frederick very gravely:

"Sir, I shall not be here on Wednesday."

The audacity of the reply amazed the King and filled the bystanders with terror. The King asked:

"What do you mean?"

"Sir, with every respect, I mean that I shall not be here on Wednesday."

"Am I to understand that if I wish you to perform the operation on Wednesday you will not do it?"

"I am obliged to tell your majesty that, in my judgment, if the operation is to be successful it must be done on Tuesday. If not on Tuesday it must be by another hand than mine."

The King finally yielded; the operation took place on Tuesday; the success was complete. But here again gossip steps in, alleging that the first incision revealed such results as to startle some of the few professionals present. At least one of them protested against going on, and finally left the room, saying hotly he would not stay to see the King "cut to pieces." But nothing shook Sir Frederick's confidence or nerve. He went on boldly, tranquilly, to the successful end.

Why, then, all this difference between Tuesday and Wednesday? Because, the surgeons will tell you, the King's malady was already so far advanced that a day's delay meant the danger, or the certainty, of blood poisoning. With this knowledge he was bound to face the King's anger. It was the way in which he

faced it that made the act so impressive, and carried the day. The King with all his suavity and unfailing tact and kindness, is a King. He has in him a thousand years of kingly traditions and inheritances. When he was Prince of Wales, and only the first of his mother's subjects, he had them. They have grown stronger with use since he came to the throne. He will listen to reason, but decides for himself, as a King should, or any other man should. If Sir Frederick had begun by explaining his reasons, the King might easily enough have brushed them aside and ended the discussion with a regal: "Wednesday, then." Nothing would have impressed the King like the respectful, "Sir, I shall not be here on Wednesday;" respectful, but also extremely rebellious. The essence of devoted loyalty was there, all the same.

One thing, it seems to me, the great surgeons and physicians I have known had in common. They were great men, first of all. They had great qualities outside of their profession. Two years ago last September, a time when the big men are mostly away, I wanted a surgeon and knew not where to find one.

SIR HENRY MORRIS.

A chemist finally gave me a name—Mr. Henry Morris—and an address; name wholly unknown to me, though the address—Cavendish Square—implied at least professional prosperity. I had had a fall at the Playhouse, as Mr. Maude calls his little theatre, the night before, leaving a box by what I supposed to be steps, and in the absence of steps coming down on the floor, bruised, and I know not what else. My surgeon made his examination. What struck me was that he wasted never a word, nor a gesture. The touch of his hands, of his fingers, had a mathematical or instrumental precision. So had his questions. In five minutes or less he had covered the ground and delivered his opinion. Anything might have happened, but nothing had—bar the bruised muscles. "We'll attend to those for you." He asked if I was leaving town, and when I said I was sailing for New York on Saturday he remarked:

"If you were a workingman I should send you to the hospital and you would be left in bed till you were well. But if you choose to sail on the *Lusitania* you must bear the pain. Now, as you are here, you might as well let me overhaul you."

Then, as before, the same precision, the same delicacy of touch, the same rapidity, nothing hurried, nothing missed; his examination a work of art as well as of science. Then he began to talk of other things; and again, and even stronger, was the impression of being in contact with a master mind. Seldom have

I spent a more stimulating hour. He was, I found later, Mr. Henry Morris, Consulting Surgeon to the Middlesex Hospital and President of the Royal College of Surgeons. In other words, Mr. Henry Morris, about whom I ought to have known, but did not, was, and is, in the very front rank of his profession. His eminence has since been recognized and rewarded by the King, and he is now Sir Henry Morris, Bart. I suppose even a republican may admit that, if titles are to be conferred, they are well conferred on men eminent in science.—*Buffalo Med. Journal.*

The Bladder in Tabetics

Rinaldo (*Gaz. degli Osped.*, January 18th, 1910) draws attention to a condition of the bladder which may sometimes be seen in tabetics as an early symptom, and, indeed, may be the only symptom at first. This consists in a loss of sensibility, so that the desire to empty the bladder comes at longer and longer intervals, until finally a spurious incontinence arises, very much as is the case in retention of urine from enlargement of the prostate, the overflow of urine being all that the patient is cognizant of. When examined by the cystoscope the condition known as "columnated bladder" is to be observed. The appearance differs somewhat from that seen in prostatitis, for in the tabetics the trigone and parts about the ureteral openings are free, whilst it is the lateral regions and the fundus of the bladder which display the marked trabecule constituting the abnormality in question. In the author's case there were no characteristic signs of tabes and no known history of syphilis: no eye symptoms, and the reflexes were normal, and there was no ataxia. There was some history of lightning pains in the thighs and calves and some complaint of altered sensation in the soles of the feet when walking. There was a history of temporary diplopia and girdle pains. There was no prostatic enlargement and no stricture. Owing to the inability to empty the bladder suprapubic cystotomy had to be done eventually. In spite of any known history of syphilis a Wassermann reaction was obtained, and found to be positive. The man was 48 years old. Attempts were made to stimulate the sensibility of the bladder by electricity, douches, etc., but with only moderate success. These bladder troubles in tabetics may be due to spasm of the sphincter, to inability to relax the sphincter, or to paresis of the detrusor. In the author's case there was no spasm.—*British Medical Journal.*

Radium in Tumor of the Eyelid

"Nothing so nearly resembling the marvellous has it been my fortune to see in surgical work," says Abbe, of New York (*Archives Roentgen Ray*, London, February, 1910), in describing how a tumor of the lower eyelid yielded to the application of radium. The case was that of a man, aged 45. The tumor had been growing for twelve months, involving two-thirds of the lid, and forming at last a mass in which all semblance of the lid and lashes was lost. It resisted treatment by X-ray experts and ophthalmologists. A section was taken from its centre and showed small-cell sarcoma. The patient was offered to Abbe that radium might be tried before excision of the lid. Strong radium in glass tubes was placed upon it four times during one week, the eyeball being protected by a thin lead shield. Week by week, without any more applications or treatment of any kind, the tumor melted away. At the end of eight weeks it was absolutely gone, and there has been no recurrence. To-day it would be impossible to say which eye was affected, save for a slight linear nick in the edge of the lid, where a bit had been taken for microscopic study. Abbe suggests, rather picturesquely, that the tumor was possibly a development of some intercellular, unrecognized, ultramicroscopic reticulum, and that this riotous cell-growth was beaten back into orderly life by the play of electrically-charged radium atoms.

The Latest From Von Pirquet

Speaking before the Philadelphia Pediatric Society a few weeks ago on the latest development of his cutaneous tuberculin test, von Pirquet made some interesting and practical observations. There are new and authentic records of 328 cases of children previously subjected to this test. Of these 124 gave a positive reaction and examination showed tuberculosis in 123 of these 124 cases. In general the re-action is very intense if the infection has just started or has recently made progress. Further than this a positive reaction does not go in giving information as to the amount of damage done. One small gland may be infected or a whole lung may be breaking down.

The negative reaction is less conclusive. As in typhoid and the Wassermann test for syphilis, antibodies may not be present in large enough quantity to give the reaction. It is more often lacking than in emaciated patients, in the later stages of miliary tuberculosis and tuberculosis meningitis. Curiously enough the

reaction is always lacking during the first week of measles.

In adults the reaction is only occasionally useful, since so many with an old healed tuberculosis give a positive result. In cases of doubtful physical signs, however, an intense positive reaction certainly indicates a tuberculous infection.

In children, von Pirquet says the reaction is useful in the diagnosis of the following conditions: chronic intestinal marasmus, bone lesions, emaciation, anæmia, subacute bronchitis, glandular swelling, furunculosis and other skin lesions, beginning meningitis. In many of the cases it is not only diagnostic but prophylactic and therapeutic.

Finally he told of a very practical use of the test which he had been able to carry out in Baltimore. The 227 children of an orphan asylum were all subjected to the test. Of these 25 below the age of six gave positive reactions. These were promptly separated from the healthy children, and in this manner the inmates are protected from possible infection by their playmates. It seems that this simple procedure might have a wide application among institutions having the charge of small children.—*Detroit Medical Journal*.

The Sweats of Phthisis

Levi (*Gazz. degli. Osped.*) has experimented in a considerable number of cases of phthisis with various antisudorific drugs, namely, atropine, infusion of sage, phosphate of calcium and gallic acid, tellurate of sodium and camphoric acid by the mouth, also friction with camphorated alcohol. Of these drugs camphoric acid in two daily doses of 15 grains each, gave the best result. Atropine sometimes did good, but rarely stopped the sweats altogether; the same could be said of infusion of sage and calcium phosphate. Tellurate of sodium in 2 cgr. doses was unsatisfactory both in not checking the sweats and in its unpleasant taste. Camphoric acid only failed in exceptionally bad cases, and its failure in any given case is looked upon as an omen of bad import. External friction with camphorated alcohol was a useful aid to treatment, but not sufficient of itself to stop the sweats. The exact *modus operandi* of camphoric acid is a matter of opinion, but in the author's experience there is no doubt as to its value as an antisudorific. Brief details of some 20 cases are given where it appears that camphoric acid often succeeded when the other antisudorifics had been tried and had failed.—*British Medical Journal*.

Miscellaneous.

A Very Grave Error

The experience of many of the best men of the profession, not only of the United States but abroad, has established the clinical value of antikamnia tablets. Among those who have paid high tributes to their value and who occupy positions of great eminence may be mentioned Dr. J. Acheson Wilkin and Dr. R. J. Blackham, practitioners of London. They have found these tablets of value in the neuralgias and nervous headaches resulting from overwork and prolonged mental strain, paroxysmal attacks of sciatica, brow-ague, painful menstruation, la grippe and allied conditions. Indeed the practitioner who has such cases as the latter come under his observation, and who attempts their relief by opiates and stronger drugs, when such an efficient and harmless agent can be used, commits a grave error.

Experience goes to prove that two antikamnia tablets in an ounce of sherry wine, taken every two to four hours, will carry the patient through these painful periods with great satisfaction.—*Medical Reprints*, London, Eng.

Surprising and interesting discoveries have recently been made in the scientific application of asbestos to every-day uses. As a result of this, the demand for asbestos is increasing by leaps and bounds. To the average Canadian it comes as a great surprise that about 80% of the world's supply of the most valuable and high-grade asbestos, that is, the asbestos with the long fibre, is produced from a very small district in the Province of Quebec, about 24 miles in length by anywhere from 100 yards to 4 miles in width. Of this 80%, about 70% is obtained from properties controlled by the Amalgamated Asbestos Corporation, whose first mortgage 5% bonds the well-known investment bankers, Æmilius Jarvis & Co., Toronto, are offering to investors at 90 and accrued interest.

The company in question on the 1st of January had orders in hand to keep all their mills running for the full capacity for over two years. It seems evident that Canada has the world's monopoly of asbestos as well as nickel.

Messrs. Jarvis & Co.'s advertisement in connection with these bonds will be found on another page.

A Danger of the Trendelenberg Position

A patient, aged 46, suffering from complete but reducible uterine prolapse, was operated upon in the Trendelenberg position and hysteropexy with three sutures performed. The subsequent onset of intestinal obstruction necessitated further interference, and the mesentery was found twisted, with a volvulus of the ileum. Beneath the inferior border of the mesenteric loop were caught up two coils of small intestine, one of which was tightly nipped. Dr. H. Duret, who publishes the case in the *Journal de Science Médical de Lille*, attributes the obstruction to the position of the patient at the time of operation. The throwing back of the viscera at an angle of 45° causes some amount of disturbance to their normal relations, especially in those who, like the patient, are the subjects of visceroptosis, and when, at the end of the operation, the horizontal position is resumed, the mesentery easily turns upon itself, and a volvulus is produced, which usually occurs from left to right owing to the relative fixation of the cæcum. The author, therefore, advises care in the use of the Trendelenberg position when dealing with cases of enteroptosis; the operating table should be moved into position slowly, and the abdomen should not be closed after operation until search has been made for twisted mesenteric loops and volvuli.—*The Hospital*.

IF SANMETTO IS USED in conjunction with instrumental treatment of urethral stricture it will be found to soothe, check or prevent the smarting and inflammation that is so common after passage of bougie.

That palpation of the abdomen by a heavy-handed examiner may cause unnecessary pain to the examinee is well known, and is sufficient reason, apart from the muscular resistance evoked, for gentleness in such manipulations. But Schreiber in the *Deutsch. Archiv. für Klin. Med.* describes albuminuria as a hitherto unknown sequela, and finds that he can produce this phenomenon practically at will in patients with fairly thin abdominal walls. The exact position at which he applies pressure for this purpose is at the level of the second lumbar vertebra, where the renal arteries arise from the aorta; sustained palpation of the aorta here will lead to albuminuria shortly after-

wards. The patient passes his urine just before the pressure is applied, and at intervals of five minutes afterwards. Schreiber says that the urine secreted during the actual compression of the aorta is probably free from albumin, and that it is that secreted subsequently that is albuminous. There would appear to be no organic lesions of the renal tissue; the effect is thought to be due to local fall of blood-pressure. The phenomenon may last from ten minutes up to twenty-four hours. Both serum-albumin and serum-globulin are present, but no casts or blood-cells are passed. In rabbits, compression of the aorta below the renal arteries will cause albuminuria, but this effect is not produced in man. The shortest period of compression that will ordinarily set up albuminuria is ten seconds.—*The Hospital*.

IN ALLAYING INFLAMMATION IN THE PROSTATIC URETHRA, before surgical operations, and in keeping the urine bland and non-irritating after the operation is complete, sanmetto has been used very extensively and found valuable.

The Trials of a Country Doctor

Vanity Fair, which, by the way, we are glad to note, besides taking quite an exceptional part among periodicals of the day in exposing quackery, is devoting serious attention to the mutual interests of the public and the medical profession, publishes in its last issue an excellent article by Mr. Morell Mackenzie on the subject which heads this paragraph. Mr. Morell Mackenzie draws a vivid picture of a country doctor's life, and clearly suggests—although he does not mention—the personal qualities needed to make such a life tolerable. The practitioner in the position described is called upon, as a rule, for a life of self-sacrifice demanded in no other situation, unless it be that of a priest of the Roman Church. He must have unbounded sympathy for weak and suffering humanity, and be prepared to devote himself to their service, with little hope of reward; he must be content with poverty, and unless he has pecuniary resources of his own, is bound to celibacy under penalty of bringing his wife and children to want through his illness and incapacity to work, or his death. Furthermore, he ought to be a master of his work, with a keen love for it in its practice and science. If we have these latter qualifications they will have been acquired only by hard work, occupying with hospital house-surgeoncies, a necessary finish to a practical education, not less

than six or seven years, and costing between £1,000 and £2,000 in capital. As a profession, in the pursuit of which the abnegation of self is an essential feature, medicine may be practised in the country with satisfaction by congenial natures; as a trade worked on strictly business lines, it cannot, as a rule, provide any adequate return for the capital invested. It is not to be wondered at if Mr. Morell Mackenzie declares that, although he has the greatest admiration for many country doctors, some of whom are leading truly heroic lives, he would be very sorry to see a son of his start with a view of becoming a country G. P.—*Medical Press and Circular.*

Mr. Roosevelt at the Sorbonne

To an audience of 3,000, composed, we are told, of the *élite* of the Parisian intellectual classes, Mr. Roosevelt last week delivered a lecture on "The Duties of the Citizen in a Republic." The most impressive part of the address was, perhaps, that devoted to the family and to the population question. Mr. Roosevelt insisted that the benediction of Biblical times, "Thy seed shall inherit the earth," was the benediction of our own; he declared that sterility was the worst of scourges, and that nothing was more deserving of reprobation than voluntary sterility; it was worse than a misfortune—it was a crime. It would be interesting to learn whether Mr. Roosevelt was aware of the fact, which was commented upon at the time in these columns, that M. Bertillon a short while ago made a census of the classes of which the audience at the Sorbonne was composed, and found that the average number of children per married couple only slightly exceeded one. Some few had three, some two, many only one, and a considerable proportion none at all. The statistics for the rest of France do not show much difference from those of Paris. In some departments, in late years, the deaths have exceeded the births. Even among the Bretons it has become an opprobrium to have a large family, and the whole population has been kept from showing a positive decline only by immigration of Italians (who in many districts supply a great part of the unskilled labor), of Swiss, and even Germans. The French population has been virtually stationary for generations. During this time a rigid code of unwritten conventions has been constructed, and has fixed the whole of French society in bonds, from which, even if they desired it, they could not, without great difficulty, free themselves. During all these years individual

men of science and scientific societies have been constantly pointing out the ruin to which the nation was advancing, whilst in the National Assembly and the Senate debate after debate has taken place with a view to the provision of some remedy through the action of the State. Every intelligent Frenchman has been aware that the national security has depended upon population, and every married man has refused to make the sacrifice called for in rearing more than one or two children. Through the disparity of numbers alone, France, without allies, would lie at the mercy of Germany, and in so far as force gives predominance, she has lost for ever her position as the leading Continental power. The question of interest from the scientific point of view is, whether, by the gigantic system of artificial selection which they have been carrying on, the French have brought about deterioration of their race. We admit we have no data upon which to form a solid opinion, but certainly the small families and the matrimonial customs would, in theory, seem to favor survival of an inferior stock. For every girl, unfit as she may be for motherhood, if she has a fortune proper to her rank—and to provide this is the first care of the parents—a husband is found; and if her fortune be large, hardly any physical inferiority or mental deficiency will form a bar to matrimony. On the other hand, the rule, with very rare exceptions, is that the moneyless girl, however richly endowed in body and mind, cannot marry. No man will have her; she would be ashamed to take a husband without bringing him the usual *dot*. Similar remarks apply to the men. For the one or two boys of the family, however inferior, if they have enough money, wives can be always found. On the other hand, if families were large, it is, of course, evident that, as a rule, those best fitted for the battle of life would succeed in matrimony as in everything else, and the process of natural selection would not be seriously interfered with. The falling birth-rate in these islands brings this question home. We have, probably, a much bigger proportional residuum of wastrels of every class, and of the feeble-minded, than the French, and these are now multiplying without restraint, whilst our really well-bred stocks are more and more checking their increase by artificial means. Science has given to mankind now, for the first time, the knowledge and power to mold as it pleases its physical future. The quality, if not the quantity, of our populace can be vastly improved by the action of the State; it is to be hoped that enlightenment of our legislators may in due course give them the power to lead the nation in the right direction before it has become altogether too late.—*Medical Press and Circular*.

Ether as an Antidote to Cocaine Poisoning. J. E. Engstadt.
Jour. Amer. Med. Assoc.

The author has frequently had occasion to treat cases of cocaine poisoning, the result of injection of cocaine for dental purposes. Strychnine and morphine he found too slow in action to be depended upon in urgent cases. Ether inhalations, however, stimulate the vasomotor system and have a powerful tonic effect upon the heart muscles, acting almost instantly. The anæsthetic should be administered only to the degree of mild surgical narcosis, or, at times, even less than this. A mask should be employed and the ether given by the drop method. This is important, as, given by the old method, the ether would only add to the danger of asphyxia by excluding air from the venous blood-engorged lungs. The same treatment is useful also for stovaine poisoning.

Why He Knew He was Alive

A certain young man's friends thought he was dead, but he was only in a state of coma. When, in ample time to avoid being buried, he showed signs of life, he was asked how it seemed to be dead.

"Dead?" he exclaimed, "I wasn't dead. I knew all that was going on. And I knew I wasn't dead, too, because my feet were cold and I was hungry."

"But how did that fact make you think you were still alive?" asked one of the curious.

"Well, this way: I knew that if I were in heaven I wouldn't be hungry. And if I was in the other place my feet wouldn't be cold."

Calcium Lactate in Post-Partum Haemorrhage. A. W. Ausems,
Nederl. Tijdschr. voor Geneesk.

Six cases, multiparæ who had suffered more or less from hæmorrhage in previous confinements, were given daily doses of 3.0 grammes (45 grains) of calcium lactate for a period varying from some days to several weeks before delivery. In all cases hæmorrhage appeared to be less than normal, but the author is not satisfied as to the success of the treatment. In a girl of thirteen years, however, suffering from metrorrhagia which had refused to yield to hydrastis or ergotin, calcium lactate arrested the discharge in three days.—*The Prescriber.*

Dysmenorrhæal Neuralgia

The following application is recommended by Dalehe for lumbar neuralgia of menstrual association. It is to be painted locally over the lumbar region and may be associated with warm baths and massage to the loins, buttocks and thighs:

R.

Ichthyoli	dr. iiss
Spir. chloroformi	
Spir. camphoræ	aa dr. iv.
Alcoholis	oz. j.

—*Clinical Review.*

Sore Nipples

These may be painted with a four per cent. solution of silver nitrate, or an ointment having the following composition may be applied:

R.

Bals. peruvianæ	dr. j.
Ungt. aq. rosæ	
Lanolini	aa oz. ss.

—*Med. Record.*

As, in the realm of logic, one fact is worth a thousand theories, so, in connection with the practice of substitution by the druggist, one concrete instance will more clearly convince the physician of the reality and prevalence of this evil than will many arguments. In Montreal, Canada, one H. H. Lyons, who conducts three retail drug stores and who calls himself the "King of Cut-Rate Druggists," has evidently been a persistent offender. Before a police magistrate of the city mentioned he was recently convicted of the criminal offence of attempting to obtain money under false pretences, in that he deliberately dispensed a preparation of iron and manganese of his own manufacture instead of Pepto-Mangan, which was plainly specified on the physician's prescription. The evidence in the case was so definite and conclusive that the presiding judge had no hesitation in finding the defendant criminally guilty. Much credit for this exemplary result must be accorded to Messrs. Leeming-Miles Co., Ltd., Canadian agents for M. J. Breitenbach Co., manufacturers of Pepto-Mangan, who obtained and caused to be presented the evidence necessary to bring about the conviction of this flagrant substitutor. It is to be hoped that the laws in the United States may be modified to conform substantially to those of Canada, and thus permit the prosecution and conviction of such offenders under the criminal statutes.

Original Communications.

TREATMENT OF PLACENTA PRAEVIA*

BY DR. FREDERICK FENTON, TORONTO.

Associate in Obstetrics, University of Toronto; Obstetrician and Gynaecologist to
St. Michael's Hospital

For the purposes of this paper I propose to limit myself to the treatment of placenta praevia, and more particularly to the limitations of and indications for the various methods at our disposal for the management of these cases. Before a gathering such as this it is unnecessary to emphasize the necessity for asepsis in all manipulations and other minor points which would naturally be included in an article upon this subject. I will, therefore, stick closely to my text and make my remarks as concise as possible.

I am alive to the fact that, in obstetric emergencies, one is at times forced to do what circumstances will admit of and not what he recognizes would be the ideal treatment.

The circumstances in cases may be very different, and what would be best in one might be inadmissible in another case.

Doubtless the comparative infrequency of the complication (1 in 200 cases) is responsible for the fact that rupture of the membranes followed by vaginal packing and Braxton Hicks' method are practically the only plans of treatment one sees outside of hospitals.

At the time of its introduction Braxton Hicks' method was a very great advance over other methods of treatment then in vogue, and there will probably always be a large field for its employment owing to the circumstances and surroundings of many cases, but it is time that efforts be made to reduce the infant mortality in these cases, as it occurs under these methods of treatment. The reports vary from 40% to 80% mortality for infants and 10% to 35% for mothers. In Shauta's clinic from 1892 to 1905 there were 344 cases of placenta praevia. Twenty mothers died (5.85%); of the children, 192 perished.

Futh has collected reports of 726 cases in the neighborhood of Coblenz, in which 12 women died undelivered, 9 died during

*Read before Section of obstetrics and gynaecology, Canadian Medical Association June, 1910.

delivery, and 122 died subsequently, making a total of 143, or 19.7%. In these cases 367 children were lost.

These latter cases belong to the period before the introduction of Hicks' method, whereas those reported from Shauta's clinic were mainly treated by that method. To this method of treatment the credit for the reduction of the maternal mortality from 20% to nearly 5% must be given. Unfortunately the death rate amongst the infants is higher with Hicks' method than had been the case with older measures of rupture of membranes and vaginal packing, etc.

The use of hydrostatic dilators has given a somewhat lower maternal mortality than Hicks' method (4.5%), and shows a decided improvement so far as the infants are concerned; in the Breslau clinic 75% of the infants were saved.

There is yet another method of treatment which still meets with a good deal of opposition in some quarters, but which I am convinced has a very important place in the management of many of these cases. With more extended experience it may yet become the recognized method where the child is living and well within the viable age. I refer to Cæsarean section.

Sellheim reports eight cases, in which all the mothers and infants were saved; Kronig has six cases, with no deaths of mothers and only one infant, a premature one, dead.

I desire to report two cases in which I have performed Cæsarean section for placenta prævia, after which I will discuss briefly the indications and limitations of the various methods in vogue for the management of these cases. Both cases occurred in my service at St. Michael's Hospital.

B. C., IX para, admitted November 2nd last, in an exsanguinated condition, having had severe hæmorrhages for two days before admission. There being no bleeding on admission, it was deemed unwise to at once proceed to delivery, lest even a small further loss of blood prove fatal.

She was about six months pregnant and the baby was living. Under these conditions the Church raises some objection to the termination of pregnancy, especially by those methods which in such a large proportion of the cases sacrifices the child.

In the absence of further hæmorrhage it was felt that the mother's interest would be best served by temporizing under strict observation, thereby giving her a chance to recover from the immediate effect of the hæmorrhages, before exposing her to the risk of a further loss by interference.

The first record I have of blood examination was made a

week after admission, when the R. B. C. were 1,000,000 per c.mm. and the Hb'n 15%. It was arranged that on the first sign of recurrence of bleeding the pregnancy was to be terminated, by Braxton Hicks' method if the baby had not reached a viable age, but by Cæsarean section if it had. About 11 p.m. on December 3rd a small hæmorrhage (about an ounce or two) occurred, and the child being within a few days of the seven months a section was done at once.

There was very little bleeding at operation, not more than in the ordinary abdominal section for other conditions.

The abdomen was filled with saline solution and the wounds in uterus and abdominal wall closed as speedily as possible.

The patient was returned to bed in good condition and made an uninterrupted recovery, except for a small sinus caused by the breaking of a silk-worm gut suture on attempted removal. The baby was delivered alive, but died in a few hours. This patient was confined to bed owing to anæmia for six weeks, but finally left the hospital two months from date of operation, still showing the effects of severe hæmorrhage, but having 3,450,000 R. B. C. and 30% Hb'n. She has since reported herself as quite well.

The second case, a III para, was operated on in April last. She had had two moderately severe hæmorrhages before admission and a more or less constant oozing ever since. She was a little over eight months pregnant and in good condition. After having had explained to her the relative dangers to herself and to the baby in the different methods of procedure, she elected to have a Cæsarean section done rather than expose the baby to the greater risk by turning.

In this, as in the previous case, there was a central placenta prævia. The mother made an uninterrupted recovery, and both she and the baby left the hospital in good condition within three weeks of operation.

The success which attended these two cases, with the very satisfactory reports from elsewhere, certainly justifies one in considering this method of delivery as a justifiable and valuable addition to our list of procedure in such cases.

In suitable cases, viz., those in which no attempts have been made at delivery or repeated vaginal examinations made, the operation is not attended by any more danger than the removal of an ectopic gestation. The danger of hæmorrhage is much less than in turning, the placenta being attached where there is no danger of its being encountered in the uterine incision, while on

removing the placenta one is able to grasp the uterus and directly control all bleeding. If necessary the lower uterine segment may be packed with gauze from above.

The performance of Cæsarean section for any purpose should not be lightly undertaken outside of a well-equipped hospital.

There are but four procedures which one need consider in the management of placenta prævia, viz.:

Rupture of membranes followed by vaginal packing;

Braxton Hicks' method;

Hydrostatic dilators followed by forceps, or version with immediate extraction;

Cæsarean section.

The first of these should, I think, be limited to emergencies where time has to be gained, as when one must transport a patient or await arrival of assistance. It should not be used as a means of treatment of a case throughout. The dangers of sepsis are greater than by other methods, and the slow oozing of blood extended over a long period of time may seriously lessen the patient's chances of recovery.

For all cases in which the child is not viable or is dead, where it is judged wiser to terminate, and as a rule prompt termination is the safe course to follow, Braxton Hicks' method is doubtless the plan to be selected, as also is it in cases after the seventh month even with a living child, in which the severity of the hæmorrhage is such that its immediate control must be secured to save the woman's life.

Where the child is living and viable the Colpeurynter or Cæsarean section are the means to be considered.

Where the cervix is not readily dilatable, and in primiparæ, Cæsarean section offers the best prospects, in multiparæ with dilatable cervixes the Colpeurynter offers sufficiently good prospects for both mother and child to have its claims advanced.

The nearer to full term the stronger the claim of Cæsarean section over the bag, and *vice versa*.

Where it is especially important to save blood, and that is the keynote of the successful treatment of placenta prævia, Cæsarean section is a means to be seriously considered, provided the circumstances and surroundings are such as to eliminate the chances of sepsis.

One other point I would like to draw attention to is the necessity for practitioners who are liable to be called to such cases being at all times prepared to do an intravenous or interstitial saline transfusion on short notice.

Where severe hæmorrhage has occurred it is not safe to do anything which may provoke a further loss of blood until the bulk of fluid in the vessels has been augmented, and for this purpose saline solution answers the purpose almost as well as blood itself.

Life may be maintained with the blood reduced to 15% or even less in corpuscular elements, but the blood pressure cannot be maintained without sufficient fluid in the vessels to fill them. I have seen two women lose their lives owing to the omission of this simple procedure before turning was attempted.

A woman who has engaged a doctor to attend her in confinement has a right to expect that he will be prepared to properly meet all recognized complications and emergencies efficiently, and the man who goes to a case of placenta prævia without a saline transfusion apparatus is not affording her the insurance which she has a right to expect from a legally qualified practitioner.

Where hæmorrhage has been severe, transfusion should be done before attempts at delivery are made by any method.

75 Bloor St. East.

APPENDICITIS IN CHILDREN*

BY DR. J. WOOD, KINGSTON.

We know of no other subject in the range of medical science that requires more careful consideration from both the physician and surgeon than "Appendicitis in Children." The term "children" in this paper shall include all under fifteen.

For more than a century the ablest men of our profession have been devoting earnest thought and effort to the diagnosis and treatment of this disease, and yet it is to-day responsible for more deaths than any other acute abdominal lesion.

The history dates back almost a century. In 1812, Parkinson, a London physician, reported the first case of death from perforation of the appendix in a boy five years old. Villermay, in 1824, reported two deaths in children, after a brief illness, and in each case the autopsy showed a gangrenous appendix. In 1837, Bohr reported a case of perforated appendix in a boy ten years old, and Burn, in 1839, recorded a similar condition in a child of fourteen years.

About this time, Melier, a French physician, collected five cases, all of which occurred within a short period, and in his report of these he suggested:

1st.—These conditions may not be so rare as they are supposed to be.

2nd.—The appendix-cæci may be the primary seat of the disease.

3rd.—Chronic suppurative tumors in the right iliac fossa may result from a primary lesion and perforation of the appendix.

4th.—The possibility of surgical interference for these conditions may some day be conceived.

Melier's conclusions deserved greater recognition than was accorded them. He was evidently living in advance of his generation.

An important contribution to our knowledge of the subject was made by Goldback and Albers, who, after careful investigation of the origin and location of these inflammations, in the right iliac fossa, introduced the terms, Typhlitis, Peri-Typhlitis, Cæcitis, etc., to distinguish the several types of the disease. Up to this time the treatment of these chronic inflammations

*Read at meeting of Canadian Medical Association, Toronto, June, 1910.

of the appendix cæci was incision and drainage, but not before fluctuation appeared. In 1848, Hancock, an English surgeon, diagnosed inflammation of the appendix, and incised the mass without waiting for fluctuation, and to him must be accorded the honor of introducing the modern method of treating a diseased appendix.

Dr. Willard Parker, a well-known surgeon, of New York, was the next to report a series of four cases, treated by incision and drainage, one, at least, before fluctuation appeared. From his observation of these cases he concluded:

1st.—That nature endeavored to throw a protective wall around the abscess.

2nd.—That there was danger of this wall being ruptured by ulceration or over-distension.

3rd.—That “a timely incision should be made, neither too early nor too late—not before adhesions had fully formed, nor after a short period before the maximum formation of pus had been reached, that is, from the fifth to the twelfth day.” He further remarked that “gangrene and perforation were much more frequent in children than in adults, and were more dangerous because of the more rapid progress of the disease in children.”

Parker's paper, published in 1867, marked a great advance in the evolution of our knowledge of the true nature of disease of the appendix, its pathology and treatment. The Willard Parker operation came into general use, and the treatment became, more and more, a question of surgery. Up to this time, the writers were no doubt earnest seekers after the truth. They made careful and accurate observations, but they did not seem able to interpret or correlate the facts they observed. Their knowledge of typhlitis, peri-typhlitis and cæcitis was vague and indefinite, and their conceptions of the origin, the pathology and the location of these conditions were in the suggestive rather than the positive stage. It remained for Reginald Heber Fitz, of Boston, to dispel the mists, clear away the misconceptions, and bring order out of confusion. The essential features brought out in this paper (*Amer. Jour. Med. Sci.*, 1886 vol. 92, p. 32) were:

1st.—That all these obscure conditions, known as typhlitis, peri-typhlitis, cæcitis, etc., were only different stages of a morbid process, beginning in the vermiform appendix, and that the word “appendicitis,” used for the first time in this paper, was “coined” by him to call attention to inflammation of the appendix, as the primary lesion.

2nd.—That an early diagnosis was imperative.

3rd.—That operation should immediately follow diagnosis.

4th.—That the diseased appendix should be excised.

This paper, published twenty years later than Parkers, introduced a new and progressive era in the history of our subject. The literature of appendicitis has increased rapidly and our knowledge has been wonderfully enriched. More than 3,000 journal articles, besides books and monographs, have been indexed in the Surgeon-General's Library at Washington since 1896.

In the study of this literature one cannot but note the almost complete absence of any special reference to appendicitis in children. With few exceptions, recent writers have treated "appendicitis" as a disease common to all ages. Books written by Morris, Fowler, Deaver, Ochsener and others are replete with information on other aspects of the disease, but not a page, or possibly even a paragraph, is found to differentiate appendicitis as it occurs in children and in adults. Among the exceptions, I may mention that Howard A. Kelley has given, in his 1909 edition of "Appendicitis and Diseases of the Vermiform Appendix," an excellent chapter on appendicitis in children, and for many of the facts in this paper I am indebted to this valuable work.

If we turn our attention to those special features which differentiate appendicitis in children and in adults, *anatomically* we find:

1st.—That the appendix in the child is relatively larger and longer.

2nd.—The walls are thinner; the meso-appendix is shorter, often less than half the length of the tube. This tends to kink or bend the appendix, and to limit the blood supply, especially to the distal half.

3rd.—The entrance from the cæcum is funnel-shaped, the lumen is larger, the mucous membrane smoother, and the valve of Gerlach often absent or ineffective, hence foreign bodies or morbid materials more readily find their way into the tube.

4th.—The lymphoid tissue in the appendix of the child is more abundant, and the blood supply is poor, hence destructive processes go on more rapidly and the liability to gangrene and perforation is greater.

5th.—The omentum is relatively smaller and less effective in walling off a gangrenous or perforated appendix.

Pathologically, we note:

1st.—These inflammations of the appendix induce a greater effusion of serum in children than in adults.

2nd.—That this effusion quickly becomes purulent.

3rd.—The occurrence of gangrene and early perforation is more frequent in the child.

4th.—That abscesses are more likely to form and to rupture in children than in adults.

5th.—That there is greater tendency to spreading peritonitis. (Sprengel found 46.8 per cent. among his cases.)

6th.—That intoxication of the system is more rapid and intense in children.

Clinically.—These differential features assume more than ordinary interest and importance. We have not time to discuss them in detail. We simply mention some of the general principles.

1st.—That appendicitis in the child is more sudden in its onset, rapid in its progress and intense in its symptoms than in the adult.

2nd.—That the unstable conditions of the nervous system (peculiar to children) may lead to confusion or error, and may delay or prevent a positive diagnosis.

3rd.—That abnormal conditions are frequently met with in children which render the clinical phenomena vague and misleading; for example, right-sided pleurisy or pneumonia may simulate appendicitis—the pain, tenderness and rigidity being located in the right iliac fossa. Or in abnormal positions of the appendix (common in children), the pain and other symptoms may be found on the left side of the abdomen, in the epigastric region or under the costal arch.

We feel that a due appreciation of the anatomical, pathological and clinical features already noted should enable us to not only differentiate appendicitis in children from the same disease in adults, but to set it apart as a subject for special and separate consideration in its diagnosis, its prognosis and treatment.

We are told by eminent authorities that “the diagnosis of appendicitis is generally easy.” This may be true in adults; it is not true in children. The recognition of appendicitis in the early stages, when operation would be successful, is extremely difficult. The cardinal symptoms of appendicitis—sudden acute pain in the right iliac fossa, tenderness over McBurney’s point, rigidity of the right rectus muscle, vomiting, elevation of temperature, acceleration of pulse, etc., which are quite constant

in the adult, are irregular, uncertain, and have little diagnostic value in the child.

The prognosis of appendicitis in the child ought to be good. Compared with the prognosis in the adult, it is bad, very bad. In 1907, the average mortality for children in six large clinics was 19.23 per cent., for adults it was 2.9 per cent.

Dr. J. B. Murphy says, "We should have no deaths from appendicitis"; but we have them. What are we going to do about it? Where does the responsibility rest for this terrible mortality, this veritable "slaughter of the innocents?"

From a careful review of the literature of appendicitis, and from observation, we have come to the following conclusions:

1st.—That the occurrence of appendicitis in children is much more frequent than it is generally supposed to be. Selter found that appendicitis was seven times more frequent before the age of fifteen than it was from fifteen to thirty.

2nd.—A large percentage of cases that occur are not diagnosed.

3rd.—A large percentage of cases are diagnosed too late for successful treatment.

4th.—That the current literature of appendicitis should be revised, and those features of the disease peculiar to children should be clearly set forth and strongly emphasized.

5th.—Our "diagnostic senses" should be awakened and trained to recognize the earliest, the initial symptoms of the disease.

6th.—Physicians and surgeons should be made to realize that an early diagnosis is imperative in the case of children.

7th.—That diagnosis should be followed immediately by operation.

263 King Street East.

TRACHOMA BODIES*

By W. H. LOWRY, M.D., TORONTO.

The causative factor of trachoma is one that has been most elusive. We have known for a long time that trachoma is an infectious disease, and many observers have isolated different cocci, bacilli and fungi as being its cause, but none of these organisms have stood the test. Now, an organism, the nature of which is not too well understood, is being discussed by pathologists, and it seems a promising one, since the same factor is being found by observers in many countries.

In April, 1907, Halberstaidter and Prowazek described very minute bodies which they found in the epithelial cells taken from the conjunctiva of trachomatous eyes. A month or so later Greeff, Frosch and Clausen published observations of the same character, and since that time these bodies have been found by observers in Japan, Russia, Germany, Great Britain, the United States, Canada and Egypt.

These bodies which we will for the time call trachoma bodies are smaller than the smallest cocci, and are found in clusters of varying size and shape, in the protoplasm of an epithelial cell. Sometimes the clusters are close to the nucleus and cap an end of the nucleus, but more often there is a clear space of protoplasm intervening. The little granules which compose a cluster, or trachoma body, are so small that one cannot make out their definite shape. It appears that these bodies, commencing as a very small cluster of granules, gradually enlarge and invade the cell protoplasm until the latter is no longer to be seen, when the cell ruptures, and is taken care of by the leucocytes which in the meantime surrounded it. Sections of tissue to show the deeper cells of the conjunctiva have also shown the trachoma bodies.

As to their nature, these organisms are supposed to be somewhere between a protozoa and a bacterium. Prowazek suggests calling them "chlamadozoa," and he thinks they are of similar character as the organisms of scarlet fever, variella and hydrophobia.

Each observer has made control examinations of healthy con-

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conjunctivæ, and conjunctivæ infected with other diseases, and these bodies have not been present. Healthy conjunctiva of man and of apes has been infected with trachomatous secretion in which the trachoma bodies were present, and in each case typical attacks of trachoma were produced, showing similar bodies in the secretion. Unfortunately no one has yet been able to grow a culture of the organism.

These chlamadozoa, or whatever they are, are found best in the acute stage of the disease, and they become less numerous or disappear altogether when treatment is initiated. I have made examinations of three cases of acute trachoma, and of one case of follicular conjunctivitis. Each of the trachoma patients showed the organisms in small numbers, while I could find none at all in the other patient. Treatment had been given in each of the cases before smears were made, which probably accounts for the scarcity of trachoma bodies.

The method used was to scrape the conjunctiva with a knife or scoop, under cocaine anæsthesia, and spread the material obtained as thinly as possible, on a slide, dry with heat, then fix by keeping in alcohol for ten minutes; wash off with water, and stain for twenty-four hours in a 1-30 solution of giemsa stain. The nucleus stains dark purple, the protoplasm a light blue, and the trachoma bodies pinkish or a pinkish red.

Selected Articles.

THE MANAGEMENT AND TREATMENT OF CHRONIC BRIGHT'S DISEASE*

BY T. R. BRADSHAW, M.D., F.R.C.P. (LOND.),

Senior Physician, Royal Infirmary, Liverpool; Lecturer on Clinical Medicine, University of Liverpool.

In response to a request on the part of members of my class that I would deal more especially with the practical treatment of diseases, I gladly devote this lecture to the management and treatment of chronic Bright's disease.

At the outset I must, however, remind you that at the root of all successful treatment there must be an accurate diagnosis, without which our best attempts at medication or other ameliorative efforts are only blind gropings in the dark, and are as likely to do harm as good.

THE POSSIBILITIES AND AIMS OF TREATMENT.

Having established the diagnosis that our patient is suffering from a chronic disease of his kidneys, let us consider first what kind and degree of benefit we may hope to confer on him by treatment. We may generally assume that the patient has already been a sufferer from kidney disease for a longer or shorter time when he first comes under our observation: in a case of cirrhotic kidneys, the disease has probably been slowly coming on for years. It is plain, therefore, that permanent organic changes, destruction of secreting membrane or increase of fibrous tissue, or both, have been established, and that a *restitutio ad integrum* is not to be hoped for. Chronic renal disease is, strictly speaking, incurable.

On the other hand, the slow onset and progress of the disease show that the destruction of secreting kidney tissue is far from being complete, since complete destruction of the secreting tissue would be as incompatible with continued life as would be the existence of an impermeable stricture of the urethra. In effect we may conclude that the patient possesses kidney tissue capable of dealing more or less imperfectly with the average nitrogenous waste of the body, and that if the nitrogenous waste were reduced in amount it might be capable of eliminating it entirely.

We shall further probably find that the patient is suffering

*Delivered at the Liverpool Royal Infirmary.

from malnutrition manifesting itself as anæmia or in other forms—malnutrition presumably due to the retention of toxic products of which the origin and nature are not yet thoroughly understood.

The chief indications for treatment will therefore be (1) to arrest or retard the diseased processes that are going on in the kidneys; (2) to diminish the nitrogenous waste to such an amount as may be dealt with by the remaining kidney tissue; (3) to counteract the deleterious influence of materials retained in the economy; and (4) to improve the general nutrition.

LINES OF TREATMENT.

1. *Causal*.—In a large proportion, perhaps the majority, of cases the diseased process has originated and is maintained by the kidneys being called upon to excrete an excess of nitrogenous waste, so that our second indication will also meet the requirements of the first. In a certain proportion of cases urethral stricture or other lesion of the lower urinary passages is the starting-point of the disease, and always ought to be thought of as a possibility, and if found, properly dealt with. Syphilis is responsible for a special form of the disease, which Dr. J. R. Bradford has drawn special attention to; and I have seen symptoms of chronic Bright's disease entirely disappear under anti-syphilitic treatment in the case of a child which was suspected to have a syphilitic parentage. Amyloid disease calls for treatment, generally surgical, but is seldom met with nowadays. In cases which have arisen from an acute nephritis, from scarlatina, or from pregnancy, the exciting cause is clearly out of reach.

2. *General Management*.—In dealing with the other indications our first duty will be to regulate the patient's life, to decide whether or to what extent he is to continue his ordinary avocation, or whether he requires to lead the life of an invalid. Most cases first come under our notice owing to the occurrence of an intercurrent acute or sub-acute exacerbation, or of some complication, and then of course rest in bed is generally required for a time. In advanced cases with marked hypertrophy of the heart, headache, and liability to bronchial catarrh, we ought to urge the patient to retire from active work; but in this disease it is often difficult to convince the sufferer of the real gravity of his condition, and he may allege that our advice is a counsel of perfection which his circumstances make it impossible for him to accept, or that he would rather die in harness. In cases of less severity we should endeavor to restrain the activities of our patient, whether in work or pleasure, within reasonable bounds. We explain to him that he has a damaged organ which can work

very well at low pressure, but which is likely to break down under any unusual strain. The more ambitious walks of business or profession must be renounced; long hours of work must be curtailed; eight or nine hours of sleep must be insisted on; a certain time every day must be set apart for gentle exercise in the open air. Exhausting labor, whether at work or pleasure, must be prohibited. Some patients are continually testing their urine to see whether the albumin is more or less. This should be discouraged by telling them that the mere quantity of albumin is of no real moment. The practice may, on the one hand, produce groundless anxiety, or, on the other, lead to unwarranted laxity in carrying out the *régime* we have laid down. With the tendency to congestion and inflammation of internal organs, special precautions must be insisted on against chill, and, if circumstances permit, the cold months of the year should be spent in a mild climate.

With regard to dress there is nothing special to say beyond what applies in other states of delicate health. The clothing should be suitable to the season; woollen clothing should be worn next the skin; in winter, warmth should be secured without undue weight or interference with bodily activity. A warm bath followed by a cold shower should be taken every morning. In mild cases, riding and sports, such as golf, which do not involve excessive strain or fatigue, are to be encouraged, so long as the patient can be trusted not to exceed the limits of strict moderation.

3. *Diet.*—We come next to consider the important question of diet. In this we have certain broad principles to guide us, but in practice we find that a slavish attention to rules is not usually attended by the best results, that we have to feed the whole man no less than to spare his kidneys, that within limits every case requires its own dietary. It is obvious, from what we know of the physiology of the kidneys, that the first requirement to reduce their activity is to give them as little nitrogenous or other waste as possible to excrete. The majority of people in easy circumstances habitually consume more nitrogenous food than they require; a great part of this is never incorporated into the tissues at all, but is quickly changed into urea in the liver, or enters into other combinations—uric acid, creatinin, indican, trimethylamine, and other less-known bodies, some of which have considerable toxic properties, but which the normal kidney can readily excrete. Further, the flesh of animals consumed as food contains a certain proportion of those toxic bodies commonly included under the term extractives. The obvious inference from

these considerations alone seems to be that the proper diet for chronic Bright's disease is one in which the nitrogenous food is reduced to the minimum consistent with nitrogenous equilibrium, and that animal food should be withheld altogether. But in practice other considerations, such as ease of digestion, the maintenance of nutrition, and individual idiosyncrasy, have to be taken into account; and we find that no hard and fast lines can be adhered to, that each case must be dieted on its own merits, and that the diet may have to be varied from time to time.

During an acute exacerbation or in presence of some inflammatory complication, milk will be the staple article of diet, supplemented by some farinaceous stuffs, such as rice, corn-flour, or bread and butter. Beef-tea and broths are of doubtful value, and are contra-indicated on theoretical grounds. For a day or two a pint of milk daily may be sufficient; if it is desired to keep the patient on milk for a considerable time, two or three pints will be required. The advantages of milk as a staple food in this disease are its freedom from extractives, its easy assimilation as a rule, and the quantity of water it contains; it requires, however, to be supplemented by carbohydrates, and it is markedly deficient in organic iron. The chief objection to its use is that it is not the natural food of adults, that if long continued it leads to malnutrition and anæmia, that as a rule patients thrive better when they are allowed a greater latitude in their diet. This is not only true in the slighter and earlier cases; it may happen in those that are far advanced and seemingly hopeless.

I have a man now in 12 ward who seemed to be dying of chronic Bright's disease; in spite of rigid dieting he rapidly wasted, dropsy was great, his mouth became ulcerated. Finding that all our care was without avail, I said he might have anything in reason that he fancied, including some butcher's meat. He at once began to improve; his mouth got well, and he put on flesh.

As a rule we should aim, not at cutting off ordinary articles of food altogether, but at reducing their amount. One egg or a little fat bacon may be allowed at breakfast, and three ounces of lean meat at dinner. It is usual to order fish in these cases, but it has no special advantage over butcher's meat except as regards its digestibility; we shall do best by consulting the patient's own likes and dislikes, not forgetting the charm which lies in variety; and if the patient's principles suggest a weekly day of abstinence he will probably be all the better for practising it.

Bouchard strongly recommends boiled mutton, and I have often ordered it, with apparent advantage. As regards bever-

ages, it is plain that anything approaching excess must be forbidden. In patients accustomed to taking alcohol with their meals it is generally best not to withdraw it entirely. A little whisky, well diluted, is probably the best form, but in some cases light sound wine or even bitter beer answers well. On no account must alcohol be taken except at meals.

4. *Medicinal*.—In slight cases no medicine may be required, but if anæmia is present an occasional chalybeate course is advisable. One of the following may be given:

R Liq. ferri acetatis, min. xv.
Glycerin, ʒj.
Liq. ammon. acet., ʒss.
Infus. calumbæ, ad ʒj.

Bis in die sumend.

R Ferri sulph., gr. 1½.
Magn. sulph., ʒj.
Acid sulph. dil., min. x.
Aq. menth. pip., ad ʒj.

Ter in die.

R Ferri redacti, gr. ij.

Pone in capsulam. Bis in die capienda.

The bowels must be kept moderately open. The kind and amount of aperient must be determined on general considerations. In all cases where the arterial tension is high I give a mild mercurial purge at intervals of a week or ten days. My favorite formula is the following:

R Pil. hydrarg., gr. iij.
Ext. euonymi sic., gr. ½
Podoph. resinæ, gr. ¼.
Pil. rhei co., gr. ij.

M. Ft. pil.

TREATMENT OF COMPLICATIONS AND SPECIAL SYMPTOMS.

It would not be possible within the limits of a single lecture to deal in detail with the treatment of all the symptoms and complications which may arise in the course of chronic Bright's disease. They must for the most part be treated on general principles, but with due regard to the impaired powers of elimination.

Anasarca.—A frequent symptom in all forms, except the pure cirrhotic kidney, is the presence of anasarca. If it is slight it calls for no special treatment; if it tends to increase it is desirable to withdraw chloride of sodium from the diet as much as possible. No salt is to be added to the food at table, and the bread and other articles of food are to be prepared without it. The following mixture may be prescribed:

R Theocin. sodium acetat., gr. v.
Caffein, gr. ij.
Ammon. beez., gr. v.
Aq. chlorof., ad ʒj.

M. Quartis vel sextis horis sumend.

Or, if the heart is dilated:

R Infus, digitalis, ʒj.
 Potas. c trat., gr. xv.
 Sp. chlorof., min. x.
 Infus, buchu, ad. ʒj.
 M. Sextis horis sumend.

Where the dropsy is so great that the patient is confined to bed, the best treatment is to make incisions into the subcutaneous tissue over the malleoli. Strict surgical cleanliness must be maintained, the legs swathed in absorbent cotton, and the wounds kept open by a gauze drain, or covered with smooth oil silk to prevent clogging with the cotton-wool. If the pudenda are swollen they must be examined daily, the scrotum being elevated by placing a large pad of cotton-wool beneath it. Puncturing the scrotum and prepuce, which is sometimes done, is not free from risk of sepsis; the physician may have to reduce the swollen prepuce by manual pressure to relieve the patient's difficulty in micturition and for the maintenance of cleanliness. The flow from the incisions is promoted by telling the patient to sit with his feet in warm water for an hour once or twice a day. In cases with much dropsy the most useful medicine is the well-known Baillie's pill:

R Pil. hydrarg
 Pulv. digitalis } gr. i.
 Pulv. scillæ. Sing }
 M. Ft. pil. Sextis horis copienda.

Effusion into the serous cavities should be removed by aspiration if extensive. Pleural effusion is frequently inflammatory and not merely dropsical, and should be treated accordingly.

Headache.—Headache is often the earliest and most persistent of the symptoms of chronic Bright's disease, and is no doubt of toxic origin. If it does not yield to the general line of treatment laid down in the early part of this lecture, five grains of calomel followed by a saline will often give signal relief. The common causes of headache—errors of refraction, dental caries—should be sought for.

Uræmia.—In threatening uræmia, 5 grains of calomel should be given immediately, and followed in three hours by a Seidlitz powder or a dose of Carlsbad salts. A warm bath repeated daily is useful. As regards the production of diaphoresis by hot air, where much dropsy is present it seems generally beneficial, and the effect may be increased by the hypodermic injection of one-tenth of a grain of pilocarpine. Where there is no dropsy, as in cases of cirrhotic kidney, I have never seen any good from hot-air baths, which seemed rather to exhaust the patient. Dry cups

to the loins are a time-honored and safe remedy. Epileptiform seizures may be relieved by bromide and chloral:

R Potas. bromodi
Chloral hydratis aa ʒij.
Syrup. tolu. ʒss.
Aq. cinnamoni, ad ʒvj.
M. A sixth part to be taken ever third
hour if required.

If the patient remains unconscious or unable to swallow, the bromide and chloral should be given by enema.

If uræmic convulsions persist in spite of these measures and the arterial tension is high, venesection offers the best chance of giving relief. Its chief application, however, is in acute cases, in which recovery of the kidneys may be looked for if the patient is enabled to tide over the immediate danger. In chronic disease it can at best only postpone the fatal issue for a time, and if employed at all ought not to be repeated.—*Medical Press and Circular*.

RANDOM MEDICAL NOTES IN EUROPE

BY GEORGE DOCK, M.D., NEW ORLEANS.

The thing that most impresses the traveller in Europe on his first visit is usually the finish of construction that he sees on all sides. Streets, bridges, private houses and public buildings have a solidity that strikes one as intended for ages. When he returns after a few years to the same places, however, the traveler is even more struck by the changes that have taken place. This is particularly true of Germany, where the growth of cities in the last twenty-five years has been so great. Private houses, single and apartment, are larger, more ornate, more modern. One may not always admire the taste, but one cannot deny the decorative, even monumental, effect. New city halls, new post offices, new schools and museums appear with bewildering frequency. Old and dingy quarters are torn down and replaced by handsome blocks and parks. A whole quarter may even have its topography changed to satisfy the demand for light, air or rapid transit. We can recall with patriotic pride magnificent structures in our own country—the mammoth hotels, buildings like the libraries of Washington or Boston, the museums of New York, Boston, Philadelphia and Pittsburg, the Harvard School, the Mt. Sinai Hospital and the Union Station in Washington. We may think with satisfaction that when Berlin wanted a modern public school building it took the design of one in Denver. After all, we see that even in so-called effete civilizations change and progress occur, and that no nation can be a laggard if it wishes to retain its relative rank, not to speak of forging ahead. Medical institutions are included in the category of changing conditions in Europe. New hospitals are built, old ones torn down, or enlarged and improved. New laboratories spring up. And in all these is a largeness of plan, a solidity of construction, an architectural beauty, that make them monumental. The interior has a completeness of detail and a perfection of fittings that make for the care of the sick, the work in the laboratories, the comfort and convenience of all those who are connected with the institution. I am not considering the work done. In many ways that does not agree with our ideas, I am now speaking only of construction. Costly equipment seems easier to get than it does here. So in the installation of Roentgen laboratories, the utilization of baths, of arotherapy, mechanitherapy, sun light, etc., etc. New and expensive apparatus like the electro-cardiograph seem to be readily procured. Projection lanterns of the

latest pattern can be seen in every lecture room and clinical amphitheatre.

SCHOOLS EXPENSIVELY EQUIPPED.

These things are no doubt part of the general advance in countries long accustomed to build for the future. In part, as in the case of laboratories, they indicate changes in the methods of work. I well remember the place where Koch did his epoch-making investigation on wound infections in 1877, a small lecture room, in which in vacation some years later, I took my own first course in bacteriology. It was enough for the simple methods of those days, but the greater number of manipulations and all the chemical, physical and biological work that must be combined with cultures and inoculations makes large and well-equipped laboratories essential to-day.

There is also a commercial motive in the lavish expenditure for educational and scientific institutions. This is openly stated as the explanation of the bountiful provision for hospitals and laboratories in cities on political frontiers. It doubtless plays a part in keeping up the stream of foreigners, especially Americans. For it is interesting to see how that stream does keep up, though the attractions have changed. It is not long since the man who wished to cultivate the elements of medicine, like chemistry, histology, physical diagnosis, and pathology, later bacteriology, was obliged to go abroad for them. Now, in all the good American schools, there are better obligatory courses than any given in Europe to undergraduates. But the larger quarters, the better organization for advanced work, the concentration of clinical material and the rapid adaptation of new methods all tend to keep up the attendance of foreigners on the "other side."

Only actual inspection can convey an idea of the beauty and perfection of detail of laboratories like Wright's at St. Mary's, or the Serum Institute in Vienna. In the magnificent clinic of Von Rosthorn, the laboratories are as large as, and much handsomer than any I know in any of the universities in this country. It is often said such laboratories do not produce an adequate amount of work. If in many cases this is true, the remark in general is idle, and only illustrates that brick and mortar, or even glass and marble, do not alone make seats of scientific activity.

"Guy's" and "Bartholomew's" must always be interesting to medical students; the places where men like Bright and Addison worked, and where their records may still be seen, have all the charm that great historical association lends.

THE OLD CHARITE IN BERLIN.

Those who knew the old Charite in Berlin would not recognize it now. Many new buildings, models of North German architecture, have been erected around and beyond the original barracks. Though more crowded than in some other cities, the various buildings are so placed among trees as to seem isolated. The imposing Hospital for Infectious Diseases, and the Pathological Institute and Museum form part of the group. Pictures of the new buildings for the clinics on Monbijou Street, show how even the excellent quarters in the Ziegel Street have been outgrown. The most striking evidence of the large plan of hospital work in Berlin is the new Rudolf Virchow Hospital, in the northwestern edge of the city, yet convenient to the centre by trolley cars. Friedrichshain, in its pleasant park; Mozabit, with its quaint old barracks, the newer and more modern Urban and Charlottenburg hospitals seemed to be all the city would need as regards space, construction and organization. The new one shows what can be done with money, forthcoming in this case by reason of the resources of the "Krankenkassen." It was built in 1899-1906. Its 57 buildings, with 2,000 beds, occupying a part of 63.5 acres, laid out with trees and landscape gardening that make one forget he is at the edge of a growing city. The cost of building was \$4,775,000, or \$2,387 per bed, including equipment. Most of the buildings are one-storied, of stucco, and while nothing has been spent for decorations, the complex is imposing from its size and arrangement, the various services being distributed with reference to convenience of work. The heating and ventilation seem excellent. There are 95 telephones, 20 of which are on the city central, and a main central with lamp signals. The water supply is from wells on the premises, and the hospital has its own filter plant, ice-factory and machinery for aerating the water. All discharges are sterilized by steam or hot water before going to the sewer. Bath water is disinfected in the tubs. The material from the infectious wards and autopsies is disinfected with calcium chloride. All clothing of patients is disinfected on admission, and left in ventilated aseptic lockers until discharged. The laundry is most complete. Without going into details, let me mention that 12 women with machines are kept busy with repairs. The kitchen has all the labor-saving devices known, as well as a highly specialized force of men and women. The hydriatic and mechano-therapeutic departments are large and well equipped, the latter with apparatus of original design. The treatment is carried out by trained assistants, according to prescriptions. The X-Ray

and Finsen departments and photographic laboratories are well arranged. The Pathological Laboratory, under the charge of Prof. Hansemann, with its bacteriologic, chemical and biologic divisions, is more extensive than most university departments of pathology in this country. The whole is cared for by 12 higher medical offices: a prosector, a dentist, 38 assistant physicians, 19 volunteer assistants and 15 undergraduates. The only thing one can criticize is that it is not a teaching hospital.

Perhaps the most remarkable evidence of the importance of medicine in Berlin is the Empress Frederic House of Post-Graduate Study, not far from the north end of the Charite grounds. The large and imposing house is the centre for post-graduate study, which has been organized in Germany with characteristic thoroughness, in acknowledgment of the pioneer work in that line in America. Besides the headquarters for post-graduate instruction, especially in Berlin, and rooms for certain courses, there are large and well-arranged exhibits of everything relating to medicine and hygiene. One can see the instruments of various makers, medical preparations, hospitals and laboratory equipment, photographs of sanatoria and watering places. In another part are all sorts of plumbing supplies. Catalogue and well-informed, courteous attendants assist the visitor to see what he wishes. There is a collection of anatomic preparations arranged for the inspection of the public, and another for physicians only. Special exhibits are arranged from time to time. It would seem that in cities like New York and Chicago similar places would be highly successful in every way.

As the pictures show, the clinics and laboratories of Budapest are numerous, handsome, and well arranged. The new teaching hospital for Prof. Koranyi's clinic promises to be the best planned and best arranged of any I know, every detail having been worked out after inspecting the hospitals all over Europe. Not less interesting are the University buildings of Kolasvar, formerly Klausenburg. Finally, it is interesting to see a plan of the great "Policlinico" of Rome, begun in 1894, and still being added to, its main corridor one-half kilometer long. Anyone who visits it, as I did, in September, will see that a hot climate need not check scientific work, even if he does not recall the scientific and practical contributions of the great Baccelli and his colleagues.

SCHOOLS OF TROPICAL MEDICINE.

Among the most striking evidences of progress in medical teaching in Europe are the schools of tropical medicine. For

they show how even old countries' new conditions may be well and quickly met. The need for extensive cultivation of the study of the diseases of warm countries is obvious when we consider a few facts. Within a few years the white race has finally taken to itself almost all the hottest parts of the earth, and has penetrated further and further into them. In the same time, by a series of discoveries not less astounding than those in physical science, it has been shown that the danger of warm countries are largely avoidable, due as they are to living organisms, whose life-habits and mode of entrance into the bodies of men and lower animals are rapidly becoming known. In order, then, to live most securely in warm countries and to work there most effectively, it is essential to apply the most accurate knowledge of tropical diseases as regards early recognition, treatment and prevention. What can be done, especially in prevention, how much treasure and how many lives can be saved, how much unnecessary interference with commerce can be avoided by following medical advice I need not say. A still greater demonstration of the value of scientific medicine has been made in Cuba and in the Canal zone. The knowledge how best to do such work cannot be imparted in the already crowded courses of medical schools. It can be done in special institutions, which, of course, can often be combined with medical schools, and in many cases can be profitably combined with the university medical schools, whose zoölogists, chemists and other experts can so ably assist. In such places the future tropical physician, or the port or quarantine physician, can prepare himself for his work, and there investigations in problems still unsolved may be made. So we see that all countries with colonial possessions in the tropics have their special schools for the study of tropical diseases. The needs of commerce have led keen and hard-headed business men to foster these in practical places like Liverpool, London and Hamburg, and it is a striking thing that while so much is done there, we, with our great and important tropical climate and some of the most important tropical diseases, with incalculable but obviously great economic losses therefrom, have done practically nothing. I do not forget the great work done by the Public Health and Marine Hospital Service in practice and in scientific investigations, nor the many scientific discoveries of individuals. They make all the more conspicuous the need of well-equipped institutions in localities where facilities exist, especially in ports where tropical diseases occur or are likely to be imported.

THE HAMBURG SCHOOL.

Either of the English schools could furnish the theme for

an evening's talk—Liverpool with its record in sleeping-sickness alone, or London with Manson and only a part of all that he has done. I shall limit myself to a brief description of the Hamburg school, for it seems to be particularly instructive in many ways. It was organized in 1900, the old Sailor's Hospital in the centre of the city being adapted to the purpose. The funds were contributed by the city of Hamburg and the German Empire. Enlarged in 1906, it has already become necessary to enlarge the institution again, and work to that end is in progress. Besides the hospital, the Institute contains room for the offices of the Institute and the port physicians, laboratories for the hospital assistants, and a library and reading room, equipped with all the periodicals in tropical and naval medicine as well as in internal medicine and microbiology. The room for the practical courses has places for 24 fully equipped. There are adequate laboratories for chemistry, an operating room for animals, a protozoa laboratory, a "tropical room" kept always at a temperature between 77-86 degrees F., with a relative humidity of 60-70, where mosquitoes, flies and ticks, as well as snakes and other tropical animals can be kept. A museum accessible also to the public, photographic laboratories with complete equipment, an apiary, an animal house, and a mosquito house should be mentioned.

In order to carry out the functions of training naval and tropical physicians and developing tropical medicine, courses are given. Since the beginning, 349 physicians have taken these courses, many of them foreigners. The brilliant and lamented Schaudinn was perhaps the most widely-known member of the staff. Nocht is the director, and there are also Fulleborn, Giemsa, van Prowazek and several others. As an example of the clinical material, there were for 1905-1906:

Malaria	1,578 cases
Dysentery-amebic	83 cases
Blackwater fever	71 cases
Beriberi	145 cases
Trypanosomiasis	2 cases

besides examples of most of the other tropical diseases.

Besides the work in the hospital and institute, scientific journeys have been made to Brazil, Africa, Egypt, Ceylon and India, assisted by the German steamship companies and firms engaged in various tropical trades. That the returns from such investigations will be immense, the record of the canal zone alone amply proves, for there can be no doubt that without the aid of scientific medicine, our engineers would have been as helpless as the French were before them.

OBSTETRICS AND GYNECOLOGY.

IN CHARGE OF ADAM H. WRIGHT, K. C. M'ILWRAITH, FRED. FENTON
AND HELEN MACMURCHY.

Treatment of Depression of Skull in Newborn Infant

Three or four cases of depression of skull or depressed fractures in newborn children having been reported in the *Journal* in the last twelve months or so, it may be of interest to record one in my own experience, which illustrates the simplicity with which such cases can be successfully treated.

After a tedious first labor, the child when born was found to have a depression in the left fronto-parietal region, about $1\frac{1}{2}$ in. or 2 in. in diameter. As it was hoped that recovery might occur spontaneously and the child seemed in no way affected by the condition, nothing beyond a fruitless manipulation was done till the tenth day. The child was then taken into our cottage hospital, where, with all needed help, I operated under an anæsthetic as follows:

I provided myself with an awl made from a large-sized knitting needle and an elevator made of stout wire with bowed handle and a point, somewhat flattened, bent to a right angle, so as to be about $\frac{1}{8}$ in. in length. I dissected back a small tongue of scalp, including the pericranium, over the centre of the depression, and cautiously bored through the skull. Inserting my elevator, I then easily drew the part into position. A suture and dressing were applied, and the child sent home in a few hours. Healing took place in the course of a week without the smallest complication.—W. R. Cossham, M.D. Aberd., M.R.C.S. Eng., Cirencester.—*British Medical Journal*.

Veratrum Viride in Puerperal Eclampsia

A very interesting article in support of veratrum viride in puerperal eclampsia is contributed by Dr. J. L. Archambault (*Albany Med. Ann.*, Feb., 1910). This drug combines the valuable properties of inducing vaso-dilatation and hypo-tension, profuse perspiration, copious diuresis, emesis, and often catharsis. Then the high blood pressure which allows of the free circulation of toxic products is eliminated and the very toxins to which the convulsive seizures and coma are attributable are re-

moved. The author recommends the exhibition of the drug in heroic doses. The fluid extract should be used hypodermically in 20 to 30 minim doses. To get the convulsions to stop the pulse must be slowed to 60 or under and kept there for not less than 24 hours. Since 1902 the author has substituted treatment with this drug for the induction of labor and the administration of chloroform.—*Medical Review of Reviews*.

Eclampsia and the Weather

Damp, bleak weather and the sultry and humid weather seem to have an influence on the incidence of eclampsia, as the writer shows by tables of the 262 cases of eclampsia at the Berlin Charité in the last four years compared with the weather charts. The cases in which the women present symptoms suggestive of toxæmia but without actual eclampsia should be taken into account in a study of the connection between meteorologic conditions and eclampsia. R. Schlichting (*Archiv. für Gynäkologie*, Bd. lxxxix., Nu. 2, 1910; *Journal American Medical Association*).

Incontinence of Urine Following Labor

Incontinence of urine which comes on immediately after labor due to swelling, etc., of the urethra and bladder neck, as a rule soon subsides without treatment. Later a careful examination should be made of all the pelvic organs, replacing a retroposed uterus when necessary, hastening involution of the pelvic structure by douches, tampons, pessaries, etc. In persistent or increasing incontinence some operative procedure is usually necessary. The nature of the operation should depend upon the condition of the urethra and bladder neck. The Frank operation, combined with an anterior and posterior colporrhaphy in cases where there is a relaxed and gaping vagina, and some appropriate operation for retroversion where this exists, will cure the average case of incontinence coming on after labor, and of not too long standing. In cases where there is a marked dilatation of the urethra and of long standing or cases where from necrosis the muscular wall of the neck of the bladder and urethra are wanting, Gersuny's operation seems to offer the best hope of cure. Pawlik's and Dudley's operations have likewise given good results at the hands of their originators.—G. Brown Miller (*Surgery, Gynecology and Obstetrics*).

Recurring Jaundice in Four Successive Pregnancies with Fatal Jaundice in Three Successive Infants

Dr. H. D. Rolleston, of London, reports the following case (*British Medical Journal*):

A married woman, aged 35, two months pregnant, came to St. George's Hospital on December 8th, 1908, in order to see if anything could be done to prevent the sequence of events which had characterized her three previous pregnancies. In each of these pregnancies she had become jaundiced about the sixth month, and subsequently suffered from itching of the skin. Throughout all her pregnancies she has had nausea, but has never had vomiting. She is always constipated, and this is much worse during her pregnancies. Her three children were all born six weeks before term, and, though not jaundiced at birth, rapidly became so, and died; the first, a boy, died at 5 months; the second, also a boy, at 5 months; and the third, a girl, at 16 days. She has not been able to suckle any of her children. She has never had jaundice or pruritus except during these pregnancies; she has not had biliary colic or enteric fever; and, as far as she knows, jaundice has not occurred among her own relations or in her husband's family.

During her fourth pregnancy she was treated with urotropin and salicylate of sodium, with a view of preventing infection and obstruction of the biliary tract, and the occurrence of grave jaundice in her infant. This, however, was not entirely successful, for she became jaundiced about the sixth month, and had pruritus, though she did not feel so uncomfortable as in her previous pregnancies. There was no enlargement of the liver or spleen. On June 3rd, 1909, a healthy 8 months boy was born. He did not show any sign of jaundice; when two and a half weeks old he was admitted into the hospital. There was nothing really the matter with him; the liver, spleen, and urine were healthy. He was seen again on March 1st and 10th, 1910, when he weighed 16 lbs. and was in very good health. He has never had any jaundice.

Treatment of Puerperal Infections

At a recent meeting of the Yorkshire Branch of the British Medical Association Dr. Oldfield read a paper on the treatment of puerperal septic infections. With regard to the specific treatment by vaccines and sera, the former had been found disappointing, but from the latter much could be expected if used in-

telligently. They should be given in large doses, 50 c.cm., repeated not more than twice, and early in the course of the disease, when an abscess had formed, serum was dangerous. Besides the specific treatment, a continuous lookout should be kept for local lesions, for on the prompt treatment of these depended good results. Of the various forms of local treatment, drainage held the first place, promoted at first by the propped up position and assisted by the giving of ergot and hot vaginal douches. It should be definitely assured in cases where these measures were not successful by inserting a drainage tube into the uterus, a malleable metal one being the best. Curettage, though often adopted and sometimes useful, was a risky proceeding, and in the later stages of the disease harmful. Uterine douching with salines might be tried for a few days when the lesion was uterine and did not extend beyond the uterus. The intravenous injection of mercuric chloride was useful in the early stages of bacteraemia, operative procedures such as colpotomy, hysterectomy and ligature of veins, offered better chances than expectant treatment in special cases with definite indications. Posterior colpotomy was called for, in those rare cases where pus collected in Douglas' pouch and in general peritonitis. Hysterectomy rarely did any good except in suppurating myomata, uterine abscess, and uterine perforation. Ligature of veins in chronic puerperal pyæmia gave the patient much the best chance. It was harmful in acute cases. When both sides were thrombosed the ovarian and internal iliac veins should be ligatured. When thrombosis was confined to one side the ovarian and common iliac should be tied.—*New York Medical Journal*.

Editorials.

CANADIAN MEDICAL ASSOCIATION

The recent meeting of this Association, in Toronto, was in several respects remarkable. In the first place, it was, so far as members are concerned, a very decided "record-breaker," the number registered being over 430. The numbers in attendance during the last ten years were as follows: Winnipeg, 1901, 178; Montreal, 1902, 330; London, 1903, 302; Vancouver, 1904, 267; Halifax, 1905, 222; Toronto, 1906, 79 (B.M.A.); Montreal, 1907, 235; Ottawa, 1908, 228; Winnipeg, 1909, 334; Toronto, 1910, 434.

Fortunately, however, the unusually large attendance was only one of the interesting features of the meeting. The local committees were particularly fortunate in their choice of the many distinguished visitors who were good enough to accept their invitations to attend. The addresses delivered by these visitors at the general sessions were, perhaps, taking all in all, the best ever delivered before any meeting of the Canadian Medical Association. We refer especially to the addresses of Dr. Herrington, of London, England, on "Chronic Diseases of the Kidney," Dr. J. B. Murphy, of Chicago, on "The Surgery of the Joints," and Dr. Henry C. Coe, on "The Old and New Gynæcology." There was a remarkable similarity in these three addresses in certain respects. In all three the practice was united with the scientific aspects of the subjects in a manner satisfactory to all present. Each of these three addresses kept the rapt attention of the large audience from beginning to end.

Among other features of the general sessions which created intense interest were the very able discussions which followed the reading of Dr. Charles Hastings' report of the Milk Commission. Fortunately, a large number of our lay friends were present during the discussion, and took much interest in the remarks of the various speakers.

Another discussion which took place during the general

session was a symposium on "Exophthalmic Goitre," in which Dr. S. P. Beebe, of New York; Dr. Alex. McPhedran, of Toronto, and Dr. F. H. Shepard, of Montreal, took part, and which created much interest.

The members, especially in the Toronto District, were very much pleased to have the privilege of listening to a very able lecture on an exceedingly important subject of medical education, delivered by Dr. Connell, Dean of the Medical Faculty of Queen's University, Kingston.

As a matter of fact, the members were all delighted to know that Dr. Thomas G. Roddick is still taking a very active interest in the subject of Dominion Registration, and the hope generally expressed was that his great work would soon meet with the success which it so well deserved.

Of the work done in the sections it is impossible to speak in detail. It may be stated in a general way that the work in the Medical and Surgical sections was exceedingly interesting from start to finish on each day. The section on Obstetrics and Gynæcology was not quite so satisfactory during the first day, but we are told that in the later stages the papers and discussions were the best that have ever been heard on these subjects in Toronto. There was some delay in opening the section on Pathology on the first morning, but thereafter the meetings in that section were exceedingly interesting. The committee in charge of the section on the Eye, Ear, Nose and Throat worked faithfully during the year in their efforts to produce a good section. At the end of some months, however, reports were very gloomy. We are glad, therefore, to be able to say that there was a general consensus of opinion that the meeting of this section on Thursday morning was a very admirable one, and the attendance was unusually large.

Speaking of both the general and special sessions as a whole, we may say that things appeared to be better balanced in every way than they had been in previous meetings. We are pleased to say that the local committees did magnificent work. We think that no Entertainment Committee on any previous occasion did such good work as the committee for this year, under

the chairmanship of Dr. Riordan. Among the other committees which did splendid work was that of the Reception and Publicity, under the chairmanship of Dr. R. Bruce-Smith; the Local Finance and Exhibits, under the chairmanship of Dr. S. Johnson. In addition to the local committees, the members are greatly indebted to the profession of Guelph and the staff of the Agricultural College in that city for their entertainment at Guelph on the last day of the meeting.

The President, Dr. Adam H. Wright, during the past year worked with zeal and great understanding to bring the meeting to a successful issue.

KING EDWARD VII.

In our last issue we gave specific details respecting the last illness of our late Sovereign. We find from later reports that our information given at that time was correct.

It will be of much interest to our readers to refer to his physical condition previous to the time of his last illness. In youth and early manhood he had a remarkably strong constitution, and enjoyed very good health up to the year 1871, when he had a severe attack of typhoid fever, which brought him to the verge of the grave. His principal medical attendants at that time were Sir William Jenner and Sir William Gould, and it was generally supposed that his recovery was due to the skill and careful attention of these physicians. It was supposed that he made a complete recovery from this illness, but it is not certain that he was quite so strong physically in 1872 as in 1870.

In 1898, he slipped on a spiral staircase of Waddesdon Manor and fractured his left patella. The line of fracture was nearly transverse, and close to the upper margin of the patella; the gap between the fragments amounted to a little more than two inches. After this accident he was attended by Sir Francis Laking and the late Sir William McCormick. Lord Lister and the late Sir Thomas Smith were called in consultation, and the question of

operation received the most careful consideration by his medical attendants; but after weighing all the circumstances of the case, they decided against it. We may say that Lord Lister fully endorsed this decision. The royal patient made a good recovery, and no impairment to the usefulness of the limb was left. After this time he remained in good health up to the time of his serious illness in 1901, when he was under the care of Sir Frederick Treves.

His Majesty always took a great interest in the medical profession. He honored it by consenting to become an Honorary Fellow of the Royal College of Physicians of London in 1897, and by accepting a similar compliment from the Royal College of Surgeons of England in 1900, and also a similar honor from the British Medical Association at the annual meeting at Ipswich in the same year. He took a very deep interest in the various hospitals of the United Kingdom, and was ever ready to help them. He originated the well-known "Hospital Fund." He also gave his patronage to the crusade against tuberculosis. He was largely instrumental in the establishment of the Sanatorium for Tuberculosis at Midhurst, which was opened in June, 1906. He also took special interest in the reorganization of the Army Medical Service after the South African War, and expressed privately his approval of an article published in the *British Medical Journal* of Dec. 31, 1904, which dealt with the new principle of promotion by selection on the ground of merit instead of by mere seniority. He also was chiefly instrumental in the establishment of the Radium Institute for the investigation of the therapeutic properties of that substance.

We are indebted to the *British Medical Journal* for the greater part of the information contained in this article.

NURSES IN HOSPITALS FOR INSANE

The Ontario Government has inaugurated a new system regarding the nurses in the different Hospitals for the Insane in the Province. According to the new scheme the nurses will

undergo an annual examination, and, if they pass satisfactorily, will receive a diploma after the final. The object of the authorities is to increase the efficiency of the staffs. The nurses in the future will be remunerated according to their ability.

The plan has been in operation in the English institutions for a number of years, and has been found to work out very satisfactorily. The first written examination in Ontario was held in all the hospitals simultaneously by the Official Board of Examiners early in May. The oral examinations were held during the third week in May.

The Board consists of Dr. R. W. Bruce-Smith, Inspector of Prisons and Charities; Dr. Foster, Assistant Superintendent of London Asylum, and Dr. Young, of Rockwood Asylum, Kingston.

KING GEORGE THE FIFTH

Our present Sovereign probably knows more about the British possessions beyond the seas than any other man in the United Kingdom. It is only a few years since it was our good fortune to meet him in Canada on his memorable trip around the world. It was generally remarked that, in connection with the many public functions he attended and the many addresses he delivered, he never made anything like a break during his whole trip. We have every reason to believe that he is possessed of that sort of practical wisdom which was so highly exemplified in his distinguished father, and that he will take a very active interest in all things medical. He has already shown abundant evidence of the interest which he takes in matters pertaining to the public health and the relief of suffering, especially among the sick poor. He has been President of King Edward's Hospital Fund for London since its establishment in 1897. During these years he has studied hospitals very carefully, and has on many occasions shown a very accurate acquaintance with all the details of the management of a modern hospital.

We are reminded by the *British Medical Journal* of an inci-

dent which happened in India in 1891, during the trip before referred to. During his stay in Calcutta, he on one occasion insisted on breaking through the official programme which had been drawn up, in order to visit the General Hospital, under the guidance of Sir Havelock Charles.

FLORENCE NIGHTINGALE

It is generally conceded that Florence Nightingale is one of the noblest women in the British Empire. The history of her one work during the Crimean War is well known to the whole English-speaking world. The following very interesting letter indicates the high respect which Queen Victoria entertained for this remarkable woman:

“Windsor Castle, January, 1856.

“Dear Miss Nightingale:

You are, I know, well aware of the high sense I entertain of the Christian devotion which you have displayed during this great and bloody war, and I need hardly repeat to you how warm my admiration is for your services, which are fully equal to those of my dear and brave soldiers, whose sufferings you have had the privilege of alleviating in so graceful a manner. I am, however, anxious to mark my feelings in a manner which I hope will be agreeable to you, and therefore send you with this letter a brooch, the form and emblem of which commemorates your great and blessed work, and which I hope you will wear as a mark of the high approbation of your Sovereign. It will be a very great satisfaction to me, when you return at last to these shores, to make the acquaintance of one who has set such a bright example to our sex.

“With every prayer for the preservation of your health,

“Believe me, yours sincerely,

VICTORIA, R.”

Florence Nightingale has lived for many years in a small house on South Street, London. For years she has been practically bedridden, none but her maid, her dearest relatives and

friends ever see her. She completed her 90th year shortly after the death of His Majesty King Edward. On her 90th birthday, King George honored her by sending her a message of congratulation. We are told they did not tell her the name of the King who sent it. They feared the shock might kill her; so she believed her beloved dead King, the Great Edward, remembered her in her old age.

NOTES.

The Royal College of Physicians of London last week granted licenses to practise to ninety candidates who have passed the examinations of the Conjoint Board. Amongst them was the name of Miss Dossibai Rustomji Cowasji Patell, the first woman licentiate of the ancient College in question.

THE CANADIAN MEDICAL ASSOCIATION

The forty-third annual meeting of the Canadian Medical Association was held in Toronto, June 1-4, in the buildings of the University of Toronto. On the evening of May 31st, a large smoking concert was given in St. George's Hall. On the morning of June 1, some of the section meetings were held. The Section of Medicine met in the Convocation Hall, Dr. H. B. Anderson, Chairman, and Dr. Brefney O'Reilly, Secretary. The Section of Surgery met in the Examination Hall, Dr. F. N. G. Starr, Chairman; Dr. Arthur Wright, Secretary. The Section of Obstetrics and Gynæcology met in the north hall of the Physics Building, Dr. S. M. Hay, Chairman; Dr. Clutterbuck, Secretary. The Section of Pathology met in the middle hall of the Physics Building. There were also meetings of these sections during the forenoons of June 2 and 3. In addition, there was a meeting of the Section of Eye, Ear, Nose and Throat in the south hall of the Physics Building during the forenoon of June 2.

The first general session was held in the Convocation Hall at 2.15 p.m., June 1. The retiring President, Dr. R. J. Blanchard, introduced the President-Elect, Dr. A. H. Wright. Short addresses of welcome were delivered by Hon. Dr. Pyne, Minister of Education; Acting Mayor Ward and President Falconer. The President delivered his address, taking as his subject "The General Practitioner."

Dr. Charles J. Hastings, Chairman of the Milk Commission, then read the report of his committee. He said that the reason for the existence of the Milk Commission lay in the present lamentably large infant mortality, and the fact that at least fifty per cent. of those who die under the age of five years do so from some kind of infantile diarrhoea or kindred preventible diseases, and that under the age of two years the proportion was ninety per cent. There was no problem in preventive medicine of greater significance than that of removing the dangers which exist in the ordinary market milk. Because one child had died from rabies, every dog in Western Ontario had been muzzled. Why were not some stringent measures taken to save the five thousand children under five years of age who, at a conservative estimate, might have been saved to Canada by preventive measures last year out of the ten thousand who died. Certificates were required before druggists, doctors and even undertakers could practise; but any

ignorant foreigner or man who was willing to do the work could come in and milk the cows and send out the milk which filled the coffins of the undertaker.

The commission had tried to secure legislation from the Dominion Parliament and the Local House. The Federal House was limited to the power of defining what certified milk and officially pasteurized milk were; but they had assured the Commission that when these definitions had been sufficiently adjusted by them to the satisfaction of Professor A. McGill, Dominion Analyst, they would be incorporated into the Adulteration Act. They had also tried to co-operate with the dealers, and they had found these, when properly approached, quite willing to do all they could. Two years ago a pint of certified milk could not be purchased in Toronto, while now 470 quarts are sold daily, as well as 36,448 quarts of officially pasteurized milk, 4,956 quarts of pasteurized cream, and nearly two hundred quarts from the plant of the Hospital for Sick Children. Altogether 42,074 quarts of what they could guarantee as being free from disease-producing germs were being sold daily in Toronto—almost one-half of its milk supply.

The Commission resented the statement that pasteurization paid a premium on dirt. The milk presented for pasteurization had to come up to a certain standard. Experiments at the Hospital for Sick Children had shown during the last week 30, 61, 8, 50 and 60 bacteria to the cubic centimetre after pasteurization. He had little hesitation in making the statement that, through the efforts of the Commission, working in co-operation with the Department of Inland Revenue of the Dominion Parliament, the local Houses, and municipal bodies and the dealers, they would, in a short time, have the safest milk supply of any country on the face of the earth.

Dr. Charles E. North, of New York, one of the highest recognized authorities on the question of pure milk, and water, and on sewage disposal in North America, said that the milk supply of the city of Toronto was better than that of most other cities on the continent, as outlined in the Commission's report. He himself was a member of the New York Milk Committee, which was organized with the sole object of improving the milk supply in the city of New York, because the Board of Health was limited in its efficiency by political restrictions and lack of money and medical commissions to certify milk. He strongly advised pasteurization in view of the issues involved. Part of the solution of the problem, he thought, lay in taking the dairy business out of the hands of the farmer, who could not be ex-

pected to be a dairy expert. He also mentioned a case of where 700 cases of scarlet fever were traced to one raw milk dealer. Out of three hundred guinea pigs he had injected with New York milk samples, half had died with raw milk and one with pasteurized milk, and that commercially treated, and none with certified milk.

Professor A. McGill, Dominion Analyst, then explained the necessity of specific definitions being given. The scientific definitions and the legal ones must be made alike. But there was little use defining pasteurized milk according to its processes legally if there was no recognized scientific method of discovering by tests whether these processes had been used. They could discover the bacterial contents in those milks, and go on that basis, if that were made the legal definition. Inspection of every plant would be very difficult and expensive in order to discover whether the processes had been followed.

Dr. Rutherford, Dominion Veterinarian, said that any abnormality in the cow as regards its health or diet, was liable to give rise to changes in the qualities and properties of milk, and so affect those who drank it. He mentioned a number of diets that would cause disturbing influences in the health of those who afterwards drank the milk of the cows partaking of them. Milk should never be taken from cows suffering from chronic sepsis or retention of the placental membrane, and the following diseases were communicable through the milk to human beings: Cow-pox, anthrax, rabies (possibly), foot-and-mouth disease, trembles, actinomyces, and last of all and worst of all, tuberculosis. Scarlet fever, also, was traceable to cows.

Tuberculosis should be attacked in the cow, and as that was the most common method of its transmission to humanity, the stamping out of the disease amongst cattle would remove one of the great sources amongst human beings. Afterwards, when there were no tuberculous cows, the transmission of tuberculosis would cease to be a problem. The sale of milk from cows not known to be free from tuberculosis is a crime against society, and any community that permits the sale is accessory to the crime. "What, then," said Dr. Rutherford, "must we say about communities that continue to authorize the sale from cows known not to be free from the disease?"

Dr. C. J. Fagan, of British Columbia, told of what good results were flowing from their system of dairy inspection, and that on account of the tuberculin test the percentage of effective stock was on the increase.

Dr. Fraser, of Toronto, suggested that a much smaller time should be taken in getting the milk from the cow to the consumer.

A general session was held on the same evening, when Dr. W. P. Herringham, of London, England, delivered an address on "Chronic Bright's Disease."

Dr. R. A. Reeve, Chairman of the Executive Council, then read the report of that body. A recommendation was made to the Provincial branches that membership in full standing should be limited to those who also belonged to the Canadian Medical Association.

The Council also recommended that the Association should bring out a journal forthwith, with Dr. McPhail, of Montreal, as editor; and further recommended that the Association journal should absorb the *Montreal Medical Journal*. The report was received and adopted after some discussion.

DOMINION REGISTRATION.

Dr. T. G. Roddick produced an amended bill on Dominion Registration, asking for the Association to accede to its various clauses. The clauses in which it differs from the one presented on a former occasion were read one by one, and accepted, with slight amendment. The principal change was that the Dominion Council should not fix the qualifications necessary for matriculation in the study of medicine, and for obtaining the Provincial license, this being regulated, as heretofore, by the Provincial authorities.

EXECUTIVE COUNCIL.

The following were elected for the ensuing year to the Executive Council: Dr. C. J. Fagan, Victoria, B.C.; D. Ingersoll Olmsted, Hamilton; Geo. E. Armstrong, Montreal; A. T. Shillington, Ottawa; James Bell, Montreal; F. N. G. Starr, Toronto; J. T. Fotheringham, Toronto; J. H. Elliott, Toronto; John Stewart, Halifax, N.S.; Dr. A. McPhedran, Toronto; Dr. R. A. Reeve, Toronto; Dr. Murray MacLaren, St. John, N.B.; Alex. McNeill, Charlottetown; J. D. Lafferty, Calgary, and F. G. Finley, Montreal.

The annual executive session of the Ontario Medical Association met at 10.30 and decided that their proportion of the \$5 fee paid the two associations should be 50 cents per member.

After the morning meeting of the various sections on Thursday forenoon, a large proportion of the members, their wives and daughters went to the foot of Bay Street and embarked on the steamer *Turbinia*, which crossed to Port Dalhousie. Lunch

was served on the boat, and an orchestra furnished music. The party, numbering about four hundred, were taken in special cars to the Clifton House, Niagara Falls, reaching that place about 5 o'clock. The party had time for some sight-seeing before dinner, which was served at 6.30. At the table of honor, Dr. Bruce Riordan, Chairman of the Entertainment Committee, presided. Dr. Adam Wright, President, was seated on his right hand, and Dr. Blanchard, the retiring President, on his left. On either side of those the Past Presidents of the Association were seated, facing the long room filled with small tables, at which were seated the members. After the excellent dinner had been done justice to by the hungry, Dr. Riordan called for a toast to "The King." Dr. Blanchard spoke at some length, and referred in enthusiastic terms to the reception given them in Toronto, and also said it was the most successful meeting of the Association in point of numbers and also of interest. He called for a toast to the President, Dr. Adam Wright, which was given with a tiger. Dr. Wright replied, and referred especially to the ladies. After singing "For He's a Daisy," the company repaired to the crimson ball-room, where music and dancing were enjoyed by the younger element. At 9 o'clock the cars left for Port Dalhousie, where the Turbinia was waiting, and the return journey across the lake was accomplished. An orchestra on board provided music, and hot drinks and light refreshments were served to a tired but highly delighted company.

Friday, June 3rd, was a very busy day. Meetings of the various sections were held in the forenoon; there was a general session in the afternoon, also a general session in the evening. There were two very important events in the afternoon. Dr. John B. Murphy, of Chicago, delivered the address in surgery, taking as his subject, "The Surgery of the Joints." After this there was a symposium on "Exophthalmic Goitre," opened by Dr. S. B. Beebe, of New York. Dr. McPhedran, of Toronto, considered the medical aspect, and Dr. Shepherd, of Montreal, the surgical aspect.

Dr. Henry C. Coe, of New York, delivered a most interesting address at the evening session on "The Old and New Gynaecology." In the course of it he expressed some satisfaction that the tendency to follow surgical fads and fancies seemed to be passing, and that a more conservative era had supervened. He thought that in the gynæcology of the future the surgical aspect would be less prominent, and more attention would be paid to diagnosis and all that it involved. He stated that no man had a

right to perform at the expense of a patient any operation which he could not do well; in other words, that none but a trained specialist should do it.

PROTECTIVE ASSOCIATION.

At the meeting of the Canadian Medical Protective Association Friday afternoon, on account of the illness of Dr. R. W. Powell, of Ottawa, who was unable to be present, Dr. Edmund E. King took the chair. The report showed 700 members to have joined the Association, which only found it necessary to defend one case of alleged malpractice during the year. The finances are in a flourishing condition. The same officers were re-elected.

Dr. John Stewart, of Halifax, N.S., submitted a long report to the Executive Committee, making important recommendations regarding the inspection of children in public schools. One recommendation was that the Minister of Education, or the Council of Education, should appoint a public inspector, and that each Province should have an expert medical adviser appointed to organize a complete system of medical inspection, and that these men should co-ordinate their efforts as far as possible with those of the public health service. The report also asked that the Canadian Medical Association approve of the system adopted by British Columbia this year for the medical inspection of schools. Then, in view of the large number of matters affecting public health, a Department of Public Health Inspection should be added to the permanent organization of the Canadian Medical Association.

The following officers were elected for the ensuing year:

President, Dr. Geo. E. Armstrong, Montreal; Vice-Presidents of Affiliated Societies, the Presidents of Provincial Societies, ex-officio; General Secretary, Dr. E. W. Archibald, Montreal; Treasurer, Dr. H. B. Small, Ottawa; Local Secretaries of Affiliated Societies, the Secretaries of Provincial Societies, ex-officio; Vice-President for Quebec, Dr. Simard, Quebec; Local Secretary, Dr. Campbell Howard, Montreal.

Finance Committee—Chairman, Dr. James Bell, Montreal; Dr. J. T. Fotheringham, Toronto; Dr. Murray Maclaren, St. John; Dr. S. J. Tunstall, Vancouver; Dr. F. N. G. Starr, Toronto; Dr. R. J. Blanchard, Winnipeg, and Dr. F. G. Finley, Montreal.

Special Committee on Medical Inspection of Schools—Chairman, Dr. John Stewart, Halifax; Secretary, Dr. Helen MacMurchy, Toronto; Dr. Jasper Halpenny, Winnipeg; Dr. A.

McPhedran, Toronto; Dr. C. J. Fagan, Victoria, B.C., and Dr. J. D. Lafferty, Calgary.

Committee on Medical Education—Chairman, Dr. R. A. Reeve, Toronto; Dr. James Bell, Montreal; Dr. F. G. Finley, Montreal; Dr. F. N. G. Starr, Montreal; Dr. Murray Maclaren, St. John, N.B.; Dr. C. J. Fagan, Victoria, B.C., and Dr. George E. Armstrong, Montreal.

Committee on Medical Legislation—Dr. A. T. Shillington, Ottawa, with power to add.

Public Health and Hygiene—Dr. A. T. Shillington, Ottawa, with power to add.

Amendments to Constitution and By-laws—Dr. H. B. Small, Ottawa, Chairman, with power to add.

Reports of Officers—Ingersoll Olmsted, Hamilton, with power to add.

Neerology—Dr. J. H. Elliott, Toronto, with power to add.

On the afternoon of June 3rd, the visiting ladies were taken out to Lambton Golf Club in ten automobiles and entertained in the Club-house.

On Saturday, June 4th, the members of the Association, with their ladies, went to Guelph as the guests of the profession of that city and of the President and staff of the Agricultural College. A special train of the Canadian Pacific Railway left the Union Station at eleven-thirty o'clock. The party, numbering over four hundred, were very pleasantly entertained at the Homewood Sanitarium, and at the Agricultural College. On the return trip the train reached Toronto about seven p.m.

The Twelfth Annual Conference of the American Hospital Association is to be held at the Planters' Hotel, St. Louis, Mo., September 20, 21, 22 and 23, 1910. The Association will be called to order by the President at 10 a.m. Tuesday, September 20th, in the convention hall of the Planters' Hotel, corner Fourth and Pine streets. After the address of welcome and the President's address, the following papers and reports will be presented:

1. "Relationship of Trustees to Superintendent," Dr. Henry M. Hurd, Johns Hopkins Hospital, Baltimore, Md.

2. "Private Rooms in General Hospitals," Dr. C. Irving Fisher, Presbyterian Hospital, New York City.

3. "The Training of Hospital Superintendents and Heads of Departments," Dr. F. A. Washburn, Superintendent Massachusetts General Hospital, Boston, Mass.

4. "Co-operation vs. Individualism in the Care of the Sick," Mr. Bailey B. Burritt, Secretary State Charities Aid Association, New York City.

5. "Preparation and Use of Detailed Reports for Smaller Hospitals," Mr. Walter Mucklow, Director, St. Luke's Hospital, Jacksonville, Fla.

6. "The Education of the Nurse in America," Dr. Richard O. Beard, Secretary, University of Minneapolis Hospital, Minneapolis, Minn.

7. "The Hospital as a Commercial Factor," Mr. Del. T. Sutton, Editor, *International Hospital Record*, Detroit, Mich.

8. "Methods of Raising Funds for a General Hospital," Miss Lucia L. Jaquith, Supt., Memorial Hospital, Worcester, Mass.

9. "Hospital Construction in St. Louis," Dr. Wayne Smith, Supt., University Hospital, St. Louis, Mo.

10. Report of Special Committee on Education and Training of Nurse Assistants for the Care of People of Limited Means in Their Homes and the Nursing of Patients Suffering from Chronic Diseases. Committee—F. A. Washburn, M.D.; Miss Mary Riddle, Charles H. Young, M.D.

11. Report of Special Committee on Bureau of Hospital Information and Permanent Secretaryship. Committee—Dr. S. S. Goldwater, Mt. Sinai Hospital, New York City; Dr. Henry M. Hurd, Johns Hopkins Hospital, Baltimore, Md.; Dr. P. E. Truesdale, Truesdale Hospital, Fall River, Mass.

12. Report of Committee on Hospital Efficiency, Hospital Finances and Economics of Administration. Winford H. Smith, M.D., Bellevue and Allied Hospitals, New York City.

13. Report of Committee on Hospital Construction. H. E. Webster, Royal Victoria Hospital, Montreal, Que.

14. Report of Committee on Uniform Accounting. C. Irving Fisher, Presbyterian Hospital, New York City.

15. Question Box. Chairman, Dr. R. W. Bruce Smith, Parliament Bldg., Toronto, Ont.

GRADUATES IN MEDICINE OF THE UNIVERSITY OF TORONTO, JUNE, 1910

HONORS—Adams, Fred., Cobocok, Ont.; Alexander, H. E., Fredericton, N.B.; Barker, P. W., Stratford, Ont.; Beeman, N. T., Kingsville, Ont.; Buck, F. H., Norwood, Ont.; Butterfield, R. M., Guelph, Ont.; Dickson, I. W., Toronto; Faris, M. N., Bradford, Ont.; Follett, J. V., Western Bay, Nfld.; Geiger, W., Hensall, Ont.; Harrison, H. D., Toronto; Mann, J. B., Bridgenorth, Ont.; McDonald, Miss J., Vancouver, B.C.; Parker, G. P., Lunenburg, N.S.; Watt, J. C., Toronto; Weir, T. M., Rayside, Ont.; Whyte, M. B., Toronto.

PASS—Alexander, J. G., Dunnville, Ont.; Allen, D. W., Deer Park, Toronto; Alport, E. B., Orillia, Ont.; Arnold, W. C., Zephyr, Ont.; Ball, H. DeW., Toronto; Buck, H., Port Rowan, Ont.; Burnett, J. M., Armstrong, B.C.; Brewster, F. A., Beeton, Ont.; Campbell, J. P., Arthur, Ont.; Campbell, R., Gravenhurst, Ont.; Campbell, F. T., Govan, Sask.; Clarke, W. A., West Toronto; Clark, R. W., Ballyduff, Ont.; Clark, D. A., Toronto; Cruise, W. W., Port Dover, Ont.; Day, W. F. I., Simcoe, Ont.; Dickson, J. R., Waco, Texas, U.S.A.; Elliott, H. M., Mitchell, Ont.; Ellis, Stayner, Windsor, Ont.; Eyres, H. H., Lindsay, Ont.; Ferguson, W. E., Toronto; Gallie, J. G., Barrie, Ont.; George, H. C., Port Hope, Ont.; Gillam, G. J., Woodstock, Ont.; Gillespie, A. T., Galt, Ont.; Graham, R. R., Lobo, Ont.; Guest, Miss E. M., Elginfield, Ont.; Gunn, C. G., Lucan, Ont.; Hackett, W. L., Belfast, Ont.; Hall, M. E., Gore Bay, Ont.; Hamilton, G. H. R., Guelph, Ont.; Hanna, G. M., Brantford, Ont.; Harrington, M. A., Toronto; Hart, D. C., Yorkton, Sask.; Harvey, F. R., Arthur, Ont.; Henderson, R. H., Toronto; Holmes, S. M., Chatham, Ont.; Hopper, D. A., Toronto; Horton, E. M., Roblin, Ont.; Hurlburt, C. W., Regina, Sask.; Huxtable, E. W., Sunderland, Ont.; Humphries, R. E., Walton Ont.; Jackes, H. L., Deer Park, Toronto; Jamieson, R. A., Mount Forest, Ont.; Jamieson, D. B., Durham, Ont.; Jamieson, W., Wellandport, Ont.; Johnson, H. E., Randolph, Ont.; Johnston, R. E., Toronto; Jupp, J. B., Belwood, Ont.; Kelly, C. B., Guelph, Ont.; Kidd, G. C., Trenton, Ont.; Kirby, T. S., Arthur, Ont.; Lane, R. T., Sault Ste. Marie, Ont.; Lawson, A. S., Guelph, Ont.; Leahy, B., Douro, Ont.; Lees, H. DeW., Niagara Falls, Ont.; Lemesurier, A. B., Toronto; Livingstone, H. D., Listowel, Ont.; Loring, F. W., Nelson, B.C.; Lowrie, A., Tillsonburg, Ont.; Macaulay, B. N., Cairo, Ont.; Marlatt, C. R., Whaletown, Cortez Island, B.C.; Menzies, P. K., Toronto; Mitchell, H. H., Niagara Falls, Ont.;

Moorhouse, V. H. K., Toronto; Montgomery, W. G., Gorrie, Ont.; Montgomery, J. E., Barrie, Ont.; Montgomery, R. R., Wroxeter, Ont.; Morrison, N. A., Elmvale, Ont.; Murray, H. H., Toronto; McAllister, A., Hensall, Ont.; McArthur, E. C., Greenbank, Ont.; Macdougall, G. L., Toronto; McKay, R. A., Ingersoll, Ont.; McLaren, K. A., Ottawa, Ont.; McLay, S. M., Woodstock, Ont.; McLean, W. T., Toronto; Nedd, J., Georgetown, Brit. Guin.; Nettleton, J. M., Penetang, Ont.; Nicholson, W. F., Dundas, Ont.; Niemeier, O. W., West Toronto, Ont.; Pain, A., Hamilton, Ont.; Parr, R. L., Blackstock, Ont.; Paton, J. P., Merritton, Ont.; Pettman, F. E., Nelson, B. C.; Pickard, T. R., St. Mary's, Ont.; Poirier, J. L., St. Catharines, Ont.; Proud, W. A., Hespeler, Ont.; Ritchie, A. B., Stratheona, Alta.; Ritchie, W. L., Beamsville, Ont.; Robertson, H. C., Shallow Lake, Ont.; Rogers, N. W., Barrie, Ont.; Selby, E. R., St. Isidore de Bellevue, Sask.; Sheard, Charles, Jr., Toronto; Sinclair, A. C., Toronto; Stevenson, W. O., Hamilton, Ont.; Stone, J. G. R., Parry Sound, Ont.; Streight, S. J., Oxford Mills, Ont.; Taylor, A. H., Goderich, Ont.; Thompson, F. J., Lucknow, Ont.; Thomas, J. T., Edgar, Ont.; Turofsky, H. A., Toronto; Upton, W. W., Bowesville, Ont.; Vernon, E. G., St. Mary's, Ont.; Williams, L. B., Toronto; Woodhouse, Miss C. F., Toronto; Wright, C. S., Campbellcroft, Ont.

MCGILL UNIVERSITY—FACULTY OF MEDICINE PASS LIST

The following gentlemen, 79 in number, have fulfilled all the requirements to entitle them to the degree of M.D., C.M., from the University. In addition to the primary subjects, they have passed a satisfactory examination, both written and oral, in the following subjects: Principles and Practice of Surgery, Theory and Practice of Medicine, Obstetrics and Diseases of Women and Children, Pharmacology and Therapeutics, Medical Jurisprudence, Practical and General Pathology, Bacteriology, Hygiene, Mental Diseases, and also Clinical Examinations in Medicine, Surgery, Obstetrics, Gynæcology and Ophthalmology and Otology, conducted at the bedside in the hospitals:

Allen, J. A. L., Hallville, Ontario; Allen, K. W., St. John, N.B.; Allingham, J. H., B.A., Fairville, N.B.; Amant, Harry, Chandlerville, Ill.; Anderson, W. M., Midgie, N.B.; Baldwin, W. J., A.B., Ogdensburg, N.Y.; Benner, F. A., Bayham, Ont.;

Black, V. E., B.A., Amherst, N.S.; Booth, G. E., Ottawa, Ont.; Boudreau, F. G., Merrickville, Ont.; Brown, D. M., Motherwell, Scotland; Burton, W. E., Bridgetown, B.W.I.; Carruthers, R. S. P., North Bedeque, P.E.I.; Champion, B. H., Summerside, P.E.I.; Chisholm, H. G., B.A., Antigonish, N.S.; Crease, A. L., Nelson, B.C.; Culver, C. W., Harrisville, N.Y.; Dakin, W. A., M.A., Pugwash, N.S.; Doyle, P. E., Hawkesbury, Ont.; Dunbar, D. A., Alma, P.E.I.; Dunnet, H. W., Ottawa, Ont.; Elliott, R., B.A., East Clifton, Que.; Ewert, C., B.A., Gretna, Man.; Fraser, J. R., Lakefield, Ont.; Fraser, W. G., Pembroke, Ont.; Froomeess, L. E., Montreal, Que.; Gallagher, J. B., B.A., Bath, N.B.; Gillis, S. H., Indian River, P.E.I.; Gilmour, W. N., Brockville, Ont.; Graves, C. A., Tillsonburg, Ont.; Hepburn, H. H., Edmonton, Alta.; Hepburn, W. G., Stratford, Ont.; Herbert, T. A., Barbadoes, B.W.I.; Hicks, C. R., B.A., Upper Dorechester, N.B.; Hutehison, G. W., Escott, Ont.; Keay, Arnold, New Glasgow, N.S.; Lavers, P. L., Georgetown, P.E.I.; Locke, J. A., Irena, Ont.; Lockwood, A. L., Westport, Ont.; Logie, H. B., B.A., Chatham, N.B.; Macaulay, A. E., St. John, N.B.; Mackintosh, A. E., Pugwash, N.S.; Macmillan, H., Vancouver, B.C.; Macmillan, S., Isaac's Harbor, N.S.; Maeneil, A. L. H., Stanley Bridge, P.E.I.; MacPhee, J. A., B.A., Charlottetown, P.E.I.; McAlister, W. J., Winnipeg, Man.; McBurney, A., B.A., Sawyer-ville, Que.; McCracken, W. A., Cornwall, Ont.; McEachern, M. T., Fenelon Falls, Ont.; McNaughton, M. W., Moosomin, Sask.; Malcolm, R. B., St. John, N.B.; Marchant, H. B., Victoria, B.C.; Moodie, A. R., Perth, Ont.; Morse, D. G., Lawrence town, N.S.; Mundie, G. S., B.A., Montreal, Que.; O'Brien, J. F., Fall River, Mass.; O'Callaghan, R. H. L., Woodlands, Surrey, Eng.; Park, J. E., New Glasgow, N.S.; Patten, L. A., Armstrong, B.C.; Peabody, H. S., Mansonville, Que.; Poole, Sidney B., New Westminster, B.C.; Piper, J. C., A.B., Bingham, Me.; Raphael, H. M., Ottawa, Ont.; Reed, E. H., East Whitman, Mass.; Richardson, J. W., Mountain, Ont.; Robinson, T. A., St. Mary's, Ont.; Scott, G. O., Ottawa, Ont.; Shephard, H. M., London, Ont.; Shilling-ton, R. N. W., Ottawa, Ont.; Shiler, G. A., Jr., Litchfield, Ill.; Speer, R. B., Danville, Que.; Sinclair, F. D., B.A., St. Stephen, N.B.; Stewart, A., South Indian, Ont.; Strudwick, H. T., Jamaica, B.W.I.; Turner, J. S., Spanishtown, Jamaica; Walker, E. E. W., Hamilton, Bermuda; Wilson, G. T., B.A., Vancouver, B.C.; Youland, W. E., Jr., B.A., Biddeford, Me.

FOURTH YEAR—PRIZES AND HONORS.

Holmes' Gold Medal, for highest aggregate in all subjects

458 GRADUATES OF QUEEN'S UNIVERSITY.

forming the Medical Curriculum—T. A. Robinson, St. Mary's, Ont.

Final Prize, for highest aggregate in the Fourth Year Subjects—H. Macmillan, Victoria, B.C.

Wood Gold Medal, for best examination in all the Clinical Branches—Sidney B. Peele, New Westminster, B.C.

Woodruff Gold Medal, for special examination in Ophthalmology and Oto-Laryngology—Sidney B. Peele, New Westminster, B.C.

Medical Society Senior Prize—D. M. Brown, Motherwell, Scotland.

QUEEN'S MEDICAL COLLEGE, KINGSTON

The class of 1910 started with sixty students, and only half that number have finished in the five years' course. The list of graduates and prize-winners is as follows:

DEGREES OF M.D. AND C.M.—W. E. Anderson, Ph.G., Kingston; R. R. Barker, Forfar; J. T. Beete, Henrietta, B.G.; L. C. E. Beroard, Ottawa; E. S. Bissell, South Augusta; G. L. Campbell, Pembroke; J. E. Charbonneau, B.A., Hawkesbury; B. J. Dash, Barbadoes, B.W.I.; J. A. Dougan, Lindsay; J. M. Dunn, Elgin; D. L. Fee, Camden East; R. M. Ferguson, Smith's Falls; A. H. Gannon, North Sydney, N.S.; J. A. Houston, Belleville; J. N. Gardiner, B.A., Kingston; T. M. Galbraith, Thornbury; W. Hale, B.A., Gananoque; J. Jackson, Souris, Man.; Dennis Jordan, B.A., Kingston; G. E. Kidd, B.A., Prospect; I. F. Longley, Lumsden, Sask.; H. C. Mabey, Odessa; J. D. Neville, Deloraine, Man.; G. W. Meyer, Vancouver, B.C.; S. M. Polson, M.A., Kingston; J. A. Polson, Kingston; J. G. Shaw, B.A., Regina, Sask.; H. R. Thompson, Ph.G., Morristown, N.Y.; T. R. Whaley, Soper-ton; A. B. Wickware, Ph.G., Morrisburg.

THE PRIZE LIST.

Faculty Prize in Anatomy—C. R. Graham, B.A., Arnprior.

Faculty prize \$25 for highest mark on second year examinations in Anatomy, Physiology, Histology, Chemistry and Materia Medica—G. W. Burton, Govt. Shemogue, N.B.

Faculty prize for highest percentage of marks on second year examinations in Materia Medica—G. W. Burton.

The Dean Fowler Scholarship for highest percentage of marks on work of the third year—C. M. Crawford, B.A., Kingston.

Faculty prize for best written and practical examination in third year Pathology—C. M. Crawford, B.A.

COLLEGE OF PHYSICIANS AND SURGEONS. 459

The Chancellor's Scholarship, value \$70, for highest percentage on four years' course, tenable only by those who take the examination of the Ontario Medical Council—Stuart M. Polson, M.A., Kingston.

Prize of \$25 given by Dr. W. C. Barber for best examination in Mental Diseases—H. R. Thompson, Ph.G., Morristown, N.Y.

Medal in Medicine—W. E. Anderson, Ph.G., Kingston.

Medal in Surgery—S. M. Polson, M.A., Kingston.

House surgencies in Kingston General Hospital recommended in order of merit: W. E. Anderson, Ph.G., T. M. Galbraith, G. E. Kidd, B.A.; next in order, E. S. Bissell.

COLLEGE OF PHYSICIANS AND SURGEONS OF ONTARIO—FINAL EXAMINATION

Nearly All of the Successful Candidates Are From Ontario and
Many From Toronto.

The following candidates have passed the final examination of the College of Physicians and Surgeons of Ontario. The graduates are from Ontario, except where it is otherwise stated:

W. F. M. Adams, Toronto; N. G. Allin, Bowmanville; G. W. Anderson, Toronto; J. R. Anderson, Ailsa Craig; G. Barelay, Winchester; P. W. Barker, Stratford; G. Belfie, Gananoque; J. S. Boyd, Simcoe; A. G. Brown, Toronto; C. E. Brown, London; R. M. Butterfield, Guelph; J. A. Charlebois, Fournier; J. R. N. Childs, London; D. A. Clark, Toronto; D. V. Currey, Toronto; L. C. Conn, St. Catharines; J. D. Cunningham, Sarnia; D. W. Davis, Brockville; W. Davis, Onondaga; W. E. C. Day, Shallow Lake; L. A. Douglas, Yarmouth Centre; J. G. Dwyer, Kingston; G. N. L. Earle, Omemee; H. G. Emerson, Wheatley; J. M. Fettes, Le Mars, Iowa; S. M. Fisher, London; T. M. Galbraith, Thornbury; J. L. Graham, Ottawa; M. J. Haffey, Toronto; A. K. Haywood, Toronto; C. A. Harvie, Orillia; J. J. Healey, Toronto; B. H. Hopkins, Lindsay; E. K. Henderson, Toronto; W. G. Hutchison, Port Rowan; T. O. Hutton, Berlin; G. Hyland, Toronto; D. Jamieson, Glenarm; E. F. Jeffries, London; J. A. Johnston, Strongville; H. J. James, Linden, Wis.; C. B. Kelly, Guelph; W. G. Leggett, Toronto; H. C. L. Lindsay, Strathroy; R. W. Lynn, Calgary, Alta.; R. D. Lane, Kinlough; J. C. J. Lannin, South Mountain; J. W. Lennox, Toronto; P. K.

460 COLLEGE OF PHYSICIANS AND SURGEONS.

Menzies, Toronto; W. S. Millyard, Goderich; W. J. M. Marey, Valens; E. A. W. Morgan, Oakville; S. Gordon Mills, Toronto; O. W. Murphy, Portland; C. J. McBride, Egbert; V. McCormack, Vivian; J. J. F. McCann, Perth; J. A. McEwen, Hensall; R. J. McEwen, Moffat; F. B. McIntosh, Williamsburg; J. F. McKee, Toronto; N. J. McKinley, Sealey's Bay; W. T. McLean, Toronto; R. McTavish, La Vallee; F. J. O'Connor, Campbellford; W. E. Pearson, Weston; R. S. Pentecost, Toronto; T. R. Phipps, London; F. P. Quinn, Ottawa; J. S. Quinn, Tweed; C. F. W. Ross, Peterboro; V. B. Shier, Kirkton; J. A. Simpson, Sarnia; J. S. Simpson, Maynard; J. L. Stapleton, London; J. W. Sutherland, Ottawa; A. E. Sutton, St. Thomas; A. H. Taylor, Goderich; N. L. Terwillegar, Oshawa; J. J. Thompson, Toronto; J. O. Walker, Toledo; J. C. Watt, Toronto; E. R. Wells, Barrie; R. W. Wesley, Newmarket; E. G. Worley, Hailey's Station; M. B. Whyte, Toronto; R. Wightman, Lancaster; Catherine F. Woodhouse, Toronto; L. B. Williams, Toronto.

INTERMEDIATE EXAMINATION.

The following candidates have passed the intermediate examination: F. Adams, Cobocok; E. B. Alport, Orillia; G. W. Anderson, Toronto; J. L. Anderson, Ailsa Craig; W. E. Anderson, Kingston; W. C. Arnold, Zephyr; P. W. Barker, Stratford; C. E. Brown, London; F. H. Buck, Norwood; H. Buck, Port Rowan; R. M. Butterfield, Guelph; G. E. Butterwick, London; R. W. Clark, Ballyduff; J. A. Charlebois, Fournier; D. A. Clark, Toronto; L. Conn, St. Catharines; D. V. Currey, Toronto; D. W. Davis, Brockville; W. Davis, Onondaga; W. F. I. Dey, Simecoe; I. W. Dickson, Toronto; J. G. Dwyer, Kingston; M. N. Faris, Bradford; G. D. Fripp, Ottawa; T. M. Galbraith, Thornbury; J. G. Gallie, Barrie; W. Geiger, Hensall; H. C. George, Port Hope; A. T. Gillespie, Galt; R. R. Graham, Lobo; W. L. Hackett, Belfast; M. E. Hall, Gore Bay; F. R. Harvey, Arthur; H. D. Harrison, Toronto; A. K. Haywood, Toronto; J. J. Healey, Toronto; E. K. Henderson, Toronto; R. H. Henderson, Toronto; E. M. Horton, Roblin; W. G. Hutchison, Port Rowan; T. O. Hutton, Berlin; E. W. Huxtable, Sunderland; G. Hyland, Toronto; H. L. Jackes, Toronto; G. P. Jackson, Toronto; D. Jamieson, Glenarm; G. L. Jepson, London; H. E. Johnson, Randolph; J. B. Jupp, Belwood; C. B. Kelly, Guelph; R. T. Lane, Sault Ste. Marie; J. C. J. Lannin, South Mountain; W. G. Leggett, Allanford; J. W. Lennox, Toronto; H. C. L. Lindsay, Strathroy; A. Lowrie, Tillsonburg; G. L. Macdougall, Toronto; J. B. Mann, Bridgenorth; P. K. Menzies, Toronto; S. G. Mills, Toronto; W. S.

Millyard, Goderich; R. R. Montgomery, Wroxeter; W. G. Montgomery, Gorrie; O. W. Murphy, Portland; V. McCormack, Toronto; J. A. McEwen, Hensall; W. H. McFarlane, London; F. B. McIntosh, Williamsburg; J. F. McKee, Toronto; N. J. McKinley, Seely's Bay; K. A. McLaren, Ottawa; W. T. McLean, Toronto; J. M. Nettleton, Penetanguishene; O. F. Niemeier, Toronto; W. E. Pearson, Weston; R. S. Pentecost, Toronto; T. R. Phipps, London; T. R. Pickard, St. Mary's; J. L. Poirier, St. Catharines; F. P. Quinn, Ottawa; C. F. Ross, Peterboro; J. S. Simpson, Maynard; J. L. Stapleton, London; W. O. Stevenson, Hamilton; S. J. Streight, Oxford Mills; J. W. Sutherland, Ottawa; A. H. Taylor, Goderich; F. J. Thompson, Lucknow; J. J. Thompson, Toronto; M. J. O. Walker, Toledo; J. C. Watt, Toronto; T. M. Weir, Rayside; E. R. Wells, Barrie; R. W. Wesley, Newmarket; M. B. Whyte, Toronto; R. Wightman, Lancaster; C. F. Woodhouse, Toronto; E. G. Worley, Hailey's Station; C. S. Wright, Campbellford.

MEDICAL EDUCATION IN CANADA

There has just been published under the Carnegie Foundation for the advancement of Teaching a most comprehensive and detailed report on Medical Education in the United States and Canada. It is a large volume of over 360 pages. It presents a historical survey of the whole subject, and a detailed study of present conditions, together with a characterization of each of the 150 medical schools on this continent. Each school was visited. The general characterization of the medical schools of Canada and details of those in Ontario and Quebec are as follows:

GENERAL CONSIDERATIONS.

In the matter of medical schools, Canada reproduces the United States on a greatly reduced scale. Western University (London) is as bad as anything to be found on this side the line; Laval and Halifax Medical Colleges are feeble; Winnipeg and Kingston represent a distinct effort towards higher ideals; McGill and Toronto are excellent. The eight schools of the Dominion thus belong to three different types, the best adding a fifth year to their advantage of superior equipment and instruction.

At this moment the needs of the Dominion could be met by the four better English schools and the Laval department at

Quebec. Toronto has practically reached the limits of efficiency in point of size; McGill and Manitoba are capable of considerable expansion. The future of Kingston is at least doubtful. It could certainly maintain a two-year school; for the Kingston General Hospital would afford pathological and clinical material amply sufficient, up to that point. But the clinical years require much more than the town now supplies. Its location—halfway between Montreal and Toronto, on an inconvenient branch line—greatly aggravates the difficulties due to the smallness of the community. The rapid development of the Northwest Territory will undoubtedly hasten the growth of the Winnipeg school; other institutions will in time be established nearer the Pacific coast as the country grows in population.

The legal standard in the Dominion has not thus far been high; but it has practically been elevated a year by the general movement to prolong the course to five years. Meanwhile, the high quality of instruction offered by McGill and Toronto to students who enter on less than a four-year high school education proves that our trouble in the United States has been at bottom not less one of low ideals than of low standards. Indeed, where ideals are low there are no standards; and where ideals are high the standard, even though low, is at any rate so definite that it furnishes a sure starting-point towards a clearly-apprehended goal. The low standard school in the United States has had no such starting point and no such goal.

KINGSTON: POPULATION 20,000.

(3) Medical Department of Queen's University. Organized 1854. The relation of the medical department to the university is anomalous, marking a period of transition that is likely soon to result in complete integration.

Entrance Requirement: Heretofore somewhat below that of the Arts department of the University, though students must comply with the requirements of the Province in which they expect to practice. The medical course covers five years.

Attendance: 208, 71 per cent. from Ontario.

Teaching Staff: 38, 16 being professors.

Resources Available for Maintenance: Income in fees, \$19,978. A fixed percentage of fees is annually expended on buildings, equipment, and maintenance. The remainder belongs to and is disbursed by the medical faculty.

Laboratory Facilities: The laboratory building is new and the equipment is adequate to intelligent routine work. At present, physics, chemistry and physiology are taught in the uni-

versity, in return for which the university receives a part of the fees of the students instructed. Full-time professors in anatomy and pathology are provided by the medical school. A museum is in process of formation. There is a small collection of books and periodicals in the faculty room, open to students.

Clinical Facilities: The clinical facilities are limited. The school relies mainly on the adjoining Kingston General Hospital, in which its faculty practically constitutes the staff. The average number of beds available is 80, but they are well used. In addition to ward work, students are required to work up individual cases in correct form, including the clinical laboratory aspects. There is a ward for infectious diseases. Obstetrical cases are too few. Post-mortems are secured mainly at the Rockwood Insane Asylum. Two supplementary hospitals provide additional illustrative clinical material. The opportunities for out-patient work are slight.

Date of visit: October, 1909.

LONDON: POPULATION, 41,500.

(4) Western University Medical Department. Established 1881. Practically an independent school.

Entrance Requirement: Nominal. The student, for his own protection, is expected to fulfil the requirements of the place in which he intends to practice. The medical course covers four years.

Attendance: 104.

Teaching Staff: 20, of whom 8 are professors, 12 of other grade.

Resources Available for Maintenance: Fees, amounting to \$11,590 (estimated).

Laboratory Facilities: These consist of a single room called the laboratory of pathology, bacteriology, and histology, whose equipment consists of microscopes and some unlabeled specimens—no microtome, cut sections, incubator, or sterilizer being visible—a wretched chemical laboratory, and an ordinary dissecting room. There is no outfit for physiology, pharmacology, or clinical microscopy, and no museum deserving the name. There are a few hundred books locked in cases to which the janitor carries the key.

Clinical Facilities: These are entirely inadequate. They are confined almost wholly to a small number of beds in the municipal hospital.

The school has no dispensary.

Date of visit: October, 1909.

TORONTO: POPULATION, 328,911.

(5) University of Toronto Faculty of Medicine. Established 1887. An organic department of the university.

Entrance Requirement: The Junior Matriculation Examination, strictly enforced. The course covers five years.

Attendance: 592.

Teaching Staff: 68, of whom 27 are professors, 41 of other grade. Ten professors, with fifteen assistants, give their entire time to teaching and research.

Resources Available for Maintenance: The department is supported out of the general funds of the university, its cost being considerably in excess of fees received. The latter amount to \$64,500.

Laboratory Facilities: The laboratories are in point of construction and equipment among the best on the continent. Increasing attention has recently been devoted to the cultivation of research. There are both general and departmental libraries, an excellent museum, and all necessary teaching accessories.

Clinical Facilities: The school has recently perfected a very intimate relationship with the new Toronto General Hospital, by which its faculty obtains complete control of the clinical advantages of some 500 beds. Students have free access to all wards, clinical laboratory, dispensary, etc. Other large local hospitals—general and special—are also available.

Date of visit: March, 1909.

MONTREAL: POPULATION, 467,730.

(6) McGill University Medical Faculty. Established 1824. An organic department of the university.

Entrance Requirement: The University School Leaving Examination, strictly enforced. The medical course covers five years.

Attendance: 328.

Teaching Staff: 99, of whom 19 are professors, 80 of other grade. Ten instructors devote their entire time to teaching.

Resources available for Maintenance. The department has separate endowments aggregating \$350,000, and is assisted out of the general university funds. Its fees amount to \$43,750; its budget, \$77,000.

Laboratory Facilities: The laboratories having been recently injured by fire, the school is now waiting completion of its new buildings, for which ample funds have been secured. Meanwhile its temporary quarters, well equipped for both teaching and research in all departments, show what energy and intelligence can

accomplish in the face of disaster. The anatomical and pathological museums are among the most famous on the continent. The school possesses an excellent library, and all necessary teaching accessories.

Clinical Facilities: These are excellent. The school enjoys a most favorable relation to two large hospitals, of about 500 beds, besides several other institutions. Students work freely in all the wards and clinical laboratory.

The dispensary service is large and admirable.

Date of visit: March, 1909.

(7) Laval University Medical Department. Organized 1878. The university connection is not intimate.

Entrance Requirement: Indefinite, depending on the prospective location of the student.

The medical course covers five years.

Attendance: 217.

Teaching Staff: 8.

Resources Available for Maintenance: Fees, most of which are distributed among the teachers.

Laboratory Facilities: Chemistry is given by the university. Anatomy is limited to dissecting. A single laboratory with meagre equipment is assigned to pathology, bacteriology and histology. There is a library and a small collection of specimens, not all labeled.

Clinical Facilities: The school has access to two hospitals, containing together 250 beds. The dispensary has a fair attendance.

Date of visit: March, 1909.

QUEBEC: POPULATION, 70,000.

(8) Laval University Medical Department. Organized 1848. An organic part of Laval University.

Entrance Requirement: Indefinite, depending on the student's prospective location. As most graduates locate in the Province—French being the language of instruction—they must comply with the Provincial requirement. The medical course covers five years.

Attendance: 92.

Teaching Staff: 22.

Resources Available for Maintenance: Fees and an appropriation by the university.

Laboratory Facilities: Instruction in chemistry and physics is provided by the university; in the medical building recent, though not extensive, laboratory provision is made for anatomy,

histology, bacteriology and pathology. There is no experimental physiology or pharmacology. A library for students and a museum have been started lately. The buildings are admirably kept.

Clinical Facilities: Clinical instruction in medicine, surgery and pediatrics is given at the Charity Hospital (Hotel Dieu) to the free wards of which the faculty serves as staff. The amount of material is limited in quantity; the staff rotates monthly. The hospital contains a clinical laboratory, in which instruction is given in connection with ward work. The fifth year, now required, and a proposed reorganization of staff and teaching arrangements promise to improve the instruction. Obstetrical opportunity is abundant.

The dispensary has a sufficient attendance.

Date of visit: October, 1909.

Personals

Dr. James Third, of Kingston, has left for a brief trip through Europe.

Dr. William W. Ogden is removing from Spadina Avenue to Bloor Street West.

To be Physician to His Majesty's Household—Sir Robert William Burnet, M.D.

To be Sergeant-Surgeons to His Majesty—Sir Frederick Treves, Sir Richard Havelock Charles.

To be Physicians in Ordinary to His Majesty—Sir Francis Henry Laking, M.D.; Sir James Reid, M.D.; Sir Richard Douglas Powell, M.D.

To be Honorary Surgeons in Ordinary to His Majesty—Rickman John Godlee, F.R.C.S.; Anthony Alfred Bowlby, F.R.C.S.; Sir William Watson Cheyne, F.R.S.

To be Physicians Extraordinary to His Majesty—Sir Thomas Barlow, M.D.; Sir William Henry Allchin, M.D.; Bertrand Dawson, Esq., M.D.; Sir Alan Reeve Manby, M.D.

Dr. W. Lehman, formerly of this city, is now in Vienna paying particular attention to obstetrical work.

Drs. Gibb and Willinsky, Toronto; Gunn, Kenora; and Kelly, Hamilton, are taking courses in Vienna, Austria.

Dr. Allen Baines left for England about the middle of last month. He will attend the British Medical Association meeting to be held in London.

Dr. G. Sterling Ryerson has left for Paris, where he will spend some weeks in studying radium therapy under Drs. Wickham and Degrais. He expects to return by September 1st.

Dr. F. A. Clarkson, of Toronto, having spent six weeks at the celebrated post-graduate clinics in Vienna, will visit Paris and London, and return to Toronto about the first of October.

Miss Robina Stewart, of Pittsburg, has been appointed Medical Superintendent of the Toronto General Hospital Training School for Nurses in the place of Miss Mary A. Snively, resigned.

Miss Stewart is a Canadian by birth, her early home being in Guelph, where her father resided. She received her nurse's training at the Johns Hopkins Hospital, Baltimore, where she graduated in 1901.

She remained there four years after graduating, during which time she was head nurse of the private wards in the hospital. She then left for the Middle West, where she studied the methods of various Training Schools for Nurses. For the last four years she has been in charge of the Training School for Nurses, of the Alleghany Hospital, Pittsburg.

Dr. C. A. Hodgetts has been appointed a Medical Officer for the Dominion Conservation Commission. He was recently honored when in Washington by being elected President of the Executive of the State and Provincial Boards of Health.

Dr. Adam Wright was tendered a dinner by about 40 of his personal friends prior to sailing for England, where he will attend the meeting of the British Medical Association, after visiting the Rotunda Hospital, Dublin, will visit the principal cathedral cities of England. He is accompanied by two of his daughters, and expects to return to Toronto about the middle of August.

Dr. J. A. Amyot, director of the laboratory of the Provincial Board of Health, has been appointed by the Board of Governors to be Professor of Hygiene at the University of Toronto, to succeed Dr. Wm. Oldright, who resigned earlier in the year. Dr. Amyot has been Associate Professor of Hygiene for some time, and the promotion will not interfere with his duties for the Provincial Board of Health.

The following promotions were made on the staff: Dr. W. H. Piersol, to be Associate Professor of Histology and Embryology; Dr. K. C. McIlwraith, to be Associate Professor of Obstetrics.

Obituary.

WILLIAM ALEXANDER HACKETT, M.B.

Dr. W. A. Hackett died suddenly at his home in Grimsby, May 25th. Dr. Hackett graduated M.B. from the University of Toronto in 1894. He first located at Stony Creek, and after practising for some years in that village, he went to Grimsby, where he practised up to the time of his death.

WILLIAM STEWART DOWNEY, M.D.

Dr. W. S. Downey, of Chicago, Ill., died suddenly in that city, June 1st. He was educated at Victoria Vollege, Cobourg, Ont., and graduated B.A. from that Institution in 1863, and M.D. in 1865.

After graduating he practised in St. Catharines for a number of years, and then went to Chicago, practising there until his death.

OSCAR C. DeWOLF, M.D.

Dr. DeWolf, who was Commissioner of Health of the City of Chicago for 12 years, died March 28, 1910, at his home in Chester Centre, Mass. During his Commissionership in Chicago, he made several visits to Toronto. While a resident of Chicago, he was Professor of State Medicine and Public Hygiene in the Chicago Medical School.

DR. WILLIAM HENRY GRAHAM

Dr. W. H. Graham died June 21st at his home, 1 Clarence Square, Toronto, as the result of an attack of pneumonia. He was ill but three days. He was born in Toronto 61 years ago.

He graduated from the University of Toronto and became a member of the College of Physicians and Surgeons in 1871. A wife and four children survive him.

ROBERT KOCH

Robert Koch, the famous bacteriologist, and one of the leading figures in medicine, died May 27 at Baden-Baden, of heart disease, in his sixty-seventh year. Since the passing of Pasteur and Virchow, Koch has been undoubtedly the most widely known man in the medical sciences, and his death marks the passing of an era. The rise of Robert Koch from an obscure practitioner of medicine to the position of one of the greatest benefactors of mankind, with the coveted title of Professor and the directorship of a special Institute for Infectious Diseases, was almost meteoric.

Robert Koch graduated in medicine from the University of Göttingen in 1866, and 12 years later, while a practitioner in a country town, published fundamental researches on anthrax and upon wound infections. In 1882 he published what was undoubtedly his greatest work—the discovery of the cause of tuberculosis and the use of solid media for the cultivation and isolation of bacteria. His work on the tubercle bacillus was remarkably complete and little short of marvelous, when one considers the difficulty with which this organism is cultivated and stained, and the comparatively primitive methods of that time. The introduction of solid media for the culture of bacteria was a stroke of genius stimulated by the necessities of his work. It is upon these two achievements, especially, that Koch's fame will rest.

The *St. Louis Republic*, speaking editorially of Koch, says:

“An eloquent American astronomer once characterized the change wrought by the spectroscope in the astronomer's attitude to the mysteries of the stars. He pictured the watcher of the skies standing under the spangled vault, looking up at the wheeling hosts with the steady gaze of comprehending recognition, and saying: ‘All hail, Aldebaran, I know thee! Hail, Betelgeuse, I know thee!’”

“No less epoch-making is the work of Robert Koch in another realm—one that touches the burdens of humanity much more nearly than can any knowledge of the stars. Thanks to his researches, humanity can front the deadly apparition of tuberculosis, can face that pestilence that comes to us from Asiatic coasts, with the courage of knowledge instead of the terror begotten by baffling mystery, the panic of the dread unknown. ‘I know thee’ says the pathologist of to-day, in the face of these awful foes of the race.

"The first great step in the conquest of disease is to know the foe and locate the seat of his power; the discovery of a specific is the next. It is perhaps not too much to say that the first task is the more difficult of the two, since to take it successfully is to reveal the path along which the curative agent must be sought. Already the prophylaxis of consumption and Asiatic cholera has greatly increased in effectiveness by reason of Koch's bacteriological discoveries; it would be strange if this generation of men should wholly pass without the discovery of specific curative agents.

"This has been a great age in the medical world. Virchow and Koch and Klebs and Loeffler have taken disease out of the thaumaturgic realm and revealed to us its real character. We know now that we are fighting not phantasms created by our own fears or influences of stars, or mysterious 'evil airs,' but micro-organisms as in diphtheria and tuberculosis, or degenerate cell growths as in cancer.

"Of Robert Koch it may be said that he lengthened the span of human life, substituted knowledge for bewildered ignorance, and buttressed the courage of the race in the reasonableness of the natural order."

Book Reviews

Minor and Operative Surgery, Including Bandaging. By

HENRY R. WHARTON, M.D., Professor of Clinical Surgery in the Woman's Medical College, Philadelphia. New (seventh) edition, enlarged and thoroughly revised. 12mo, 674 pages, with 555 illustrations. Cloth, \$3.00, net. Lea & Febiger, Philadelphia and New York. 1909.

That this work has reached its seventh edition is in itself a compliment to the author. We hope in the eighth edition, however, to see some changes: Keep more to minor surgery, bandaging, detail, etc., and omit much of the operative procedure, major work. The technique and methods have to be too curtailed to be of value. It is an epitome. What is needed in this direction is a work for the student and young practitioner on minor work. On page 233 the illustration is obsolete. No graduate for the last ten years would recognize it is a needle-holder. If it is advisable to illustrate needles, and we think it is, do it thoroughly, and describe what the different ones are used for, and why. We fear that Murphy would hardly think justice had been done his method of continuous rectal saline by the description on page 619. The eversion in sac in hydrocele, as described is most obscure, and misnamed. The eversion, or bottle operation, the simplest and best, is not described at all. We are not finding fault, but pointing out what we consider to be defects which should be corrected.

The Principles of Pathology. By J. GEORGE ADAMI, M.A., M.D.,

L.L.D., F.R.S., Professor of Pathology in McGill University and Pathologist to the Royal Victoria Hospital, Montreal; late Fellow of Jesus College, Cambridge, England; and ALBERT G. NICHOLLS, M.A., M.D., D.Sc., F.R.S. (Cam.); Assistant Professor of Pathology and Lecturer in Clinical Medicine in McGill University; Out-patient Physician to the Montreal General Hospital; Assistant Physician and Pathologist to the Western Hospital, Montreal. Vol. II., Systemic Pathology; 1,084 pages, 310 engravings and 15 plates. Lea & Febiger, Philadelphia and New York.

In this, the second volume, we have dealt with the pathologic changes as they affect the many systems of the body. These are taken up in order—Cardiac, Respiratory, Alimentary, Nervous,

Glands, Urinary, etc., etc.—each most exhaustively considered. The bulk of the volume must not deter one from reading it. The reading is easy; the writing is in an easy style, so different from the usual volume on pathology. The authors, while not departing from the generally accepted division of the subject, have certainly served the details to us in a much different manner. It is not a student's work; he has not the time; but his training should place him in a most enviable position to grasp all that is newest and best in the science, not hampered by too much condensation, nor expanded beyond the necessity of completeness of description. It is too bad that this work cannot be adopted as a text-book, but no student could master its details in the time at his disposal, and the examiner would have too wide a field to exercise his prerogative. To be able to write such volumes is not only an evidence of great scientific attainments, but of great literary ability. To be able to impart scientific information on a subject usually so dry is a rare gift, and we, as Canadians, can justifiably be proud that the most complete work on the Principles of Pathology is from the pens of professors in a Canadian university. The typography, paper, binding, and, by no means least, the illustrations, are of the very highest standard.

Correspondence.

THE STATUS OF MEDICAL MEN UNDER THE NEW INSURANCE BILL

To the Editor of THE CANADIAN PRACTITIONER AND REVIEW:

DEAR SIR,—For upwards of three years this Act, in some form, was before the Parliament of Canada. Ample time was, therefore, taken to consider every section, and note carefully its bearing upon the interest affected. There was thus given also an opportunity for those who wished to offer any suggestions or raise any objection to place their views before the Government.

When the Life Insurance Bill was laid on the table of the House of Commons it at once became apparent that there were three clauses that were very objectionable from the standpoint of the medical profession. These clauses were in the first draft, and are still in the Act as passed by Parliament.

Under "Interpretation" or the definitions at the beginning of the Act we have:

(h) "Officer" includes the manager, secretary, treasurer, actuary and any other person designated as "officer" by the by-laws of the company.

In section 98, sub-section 4, dealing with life insurance companies that were in operation when the Act came in force, we read:

"The manager of the company may be a director of the company, but no agent or paid officer other than the manager shall be eligible to be elected as a director. The words "paid officer" in this sub-section do not include the President and Vice-President, or the President and First Vice-President, if more than one, elected under the provisions of sub-section 9 of this section.

The next clause to which objection was raised by many medical men deals with life insurance companies that may be organized after the passing of the Act. It is as follows:

Section 146, sub-section (F): "The manager of a company may be a director, but no agent or paid officer other than the manager shall be eligible to be elected as director. The words "paid officer" in this paragraph do not include the President and Vice-President, or the President and the First Vice-President, if there is more than one Vice-President elected under the provisions of paragraph (K) of this section."

It became quite apparent that the purport of these clauses would prevent any medical practitioner from being a director of the company for which he acted as medical adviser, if for such advisory work he received any remuneration.

Medical officers of the various companies in Toronto held a meeting and appointed Dr. T. F. McMahon and myself to lay their views before Hon. W. S. Fielding, the Finance Minister, and the Committee on Banking and Commerce, which was then engaged in the consideration of the bill, clause by clause, and also in the hearing of the opinions of those interested in the bill. Dr. McMahon and I visited Ottawa and laid the views of the medical directors, given us personally or by letter, from all over Canada, before the Finance Minister, Mr. Fielding, and the said committee. What we said on that occasion is to be found in the proceedings of the House of Commons, and will stand upon its own merits.

In addition to this many letters were written to Mr. Fielding and the other members of the Government, and to prominent members of the Opposition, and also to many members of the Senate. All this had no effect, and the Insurance Bill was put through both the Commons and the Senate in the form as quoted in the foregoing clauses.

In the spring of 1909 it was expected that the bill would then be put through both Houses of Parliament. In addition to every effort that had been made, I sent the following telegrams:

“Toronto, 13th May, 1909.

“*Sir Wilfrid Laurier, Ottawa:*

“I challenge the right of Parliament to say that the medical profession of Canada cannot be trusted. The Insurance Bill states this. It allows other classes to receive salary and sit on the boards, but forbids medical men doing so. The bill should be amended to remove this glaring injustice.

“JOHN FERGUSON.”

“Toronto, 13th May, 1909.

“*Hon. W. S. Fielding, Ottawa:*

“The Insurance Bill a great injustice to medical men of Canada. It declares them unworthy of trust and cannot sit on boards of companies if they receive any remuneration for services. Other classes may receive salary and sit on boards. This is taking away a privilege when no good can be accomplished thereby.

JOHN FERGUSON.”

The bill was laid over, however, for that session, and came up again during the session of last winter. As the bill came

back from the Senate it contained the objectionable clauses, so far as medical men are concerned. I then wrote Hon. W. S. Fielding, who had charge of the bill, as follows:

“Toronto, 5th March, 1910.

“*Hon. W. S. Fielding, Ottawa:*

“DEAR SIR,—The Insurance Bill is now about complete. On the whole it is a good bill, and will do much for the interests of these great financial companies.

“There is one phase to which I wish again to call your attention. The bill provides that only the President, the Vice-President and the Manager may be on the board and receive a salary.

The effect of this is to force the medical directors off the boards of their companies, because these gentlemen receive a remuneration for their services.

“It does seem too bad that an entire class should be placed under the ban of the law in this way. The Act means that no doctor, because he is paid for his services, may sit on the board of his company.

“Business men, lawyers, etc., may fill the offices of president, vice-president, and manager; draw salaries and sit on the boards of their companies. Not so with the doctor.

“This is not fair, and I ask you if you think it is? If it is not fair and just, then change the bill to do the right thing by the medical men.

“Yours truly,

“J. FERGUSON.”

The medical profession is now put in possession of the facts. So far as the Act is concerned, the meaning is quite plain that there is not a doctor in Canada that does not come under the penal terms of this Act. No matter what his interest in a life insurance company, by way of stock or insurance may be, the law states that he cannot sit on the board of directors, if he receives any salary for his responsible duties as medical officer of his company. The manager may receive any salary the company pleases to pay. So may the president and vice-president. These gentlemen, in the eyes of the law, can be trusted to do their duty, and that the remuneration they receive will not blind their eyes; but not so in the case of the doctor. As soon as he receives a salary, he can no longer be trusted. He cannot hold a seat on the board.

There is, perhaps, one loophole through which the doctor may escape the penalties placed upon the whole medical profession

by this Act. The first clause which I have quoted states that the word "officer" includes the manager, secretary, treasurer, actuary, and any other person designated as "officer" by the by-laws of the company.

If the medical advisor of any company can induce his board to pass a by-law to the effect that he is not an "officer," indeed, may be ranked with the office-boy in status, then, perhaps, he may escape technically the meaning of this Act. This is still doubtful, and may remain so until the courts decide a case. One thing is clear, namely, the medical advisor of a life insurance company, if he is dignified with the title of an "officer," cannot occupy a seat on the board. No other class is so treated. While the bill was before the House of Commons and the Senate, a number, including the writer, made every effort to have the objectionable clause deleted from the bill, but without avail. Therefore it is that the whole medical profession is placed in a class by itself, and, in the eyes of the Life Insurance Bill, a disqualified class; or one of the rank of the office-boy; that is, if the doctor is to hold a seat on the board of his company and receive any salary, he cannot be called an "officer."

I am, yours truly,

JOHN FERGUSON.

264 College St., Toronto.

Selections.

Pernicious Vomiting of Pregnancy

Adam H. Wright, Toronto, Canada, refers to Dr. Whitridge Williams' demonstration of the nature of the disturbances of pregnancy which cause toxæmia and pernicious vomiting. Chemical examination of the urine in such cases shows a decrease in the amount of nitrogen excreted as urea and an increase in the amount excreted as ammonia. Wright reports a case in which the ammonia coefficient rose to 14 per cent., though Williams has expressed the opinion that if the ammonia coefficient rises to 10 per cent. the patient's life is endangered and the pregnancy should be terminated. The treatment instituted by Wright was as follows: It was found that a hypodermic injection of one-quarter of a grain of morphine had no effect, and it was thought that a large dose might quiet those nerve centres, which, like so many specks of dynamite, were causing a vicious circle of explosions within the digestive tract, and especially in the stomach. Consequently one-half grain of morphine was administered hypodermically; and, shortly afterward, calomel was given, one grain every hour for four doses. This treatment produced satisfactory results. The patient had some sleep during the night, and felt fairly well the next morning—better than she had felt for a month before. The nausea returned, however, during the forenoon, and she had a very bad afternoon. It was then decided to give larger doses of morphine. Accordingly one-half grain was administered hypodermically at 9 p.m., one grain of calomel was given by mouth half an hour after, and as the morphine had not produced sleep another quarter-grain was administered between 10 and 11 p.m. The patient had a comfortable night, slept well, and felt comfortable and happy the next morning. As the nausea returned each afternoon this treatment was continued for five more nights, with such excellent results that on the seventh day from the commencement of this treatment the patient had no nausea or vomiting. During this week she had five grains of morphine administered hypodermically, and eleven grains of calomel by the mouth. Although at this time (October 7) the general condition was vastly improved, the ammonia coefficient was still fairly high—8.2 per cent. After this less morphine was administered at bedtime for five days, after which it was stopped entirely. Calomel was given occasionally during the remainder

of the pregnancy. After November 1 the patient enjoyed excellent health until she reached full term, May 8. In accordance with my custom during the last five years, of inducing labor at term or within two or three days after, labor was induced May 10, when a healthy child was born. At the time of writing (nearly nine months later) mother and child are both well.—*Journal A. M. A.*

Pharmacology of Agar-agar

An interesting article on this subject appears in *American Druggist*, 56, 291. After mentioning the history of the substance, its composition (chiefly the carbohydrate gelose), its use as a culture medium and in toilet preparations, the article proceeds to explain its modern uses in habitual constipation, quoting Gomperz's satisfactory results in administering the substance to patients in 15 gram doses morning and evening. The article closes with mention of the fact that the proprietaries Cascara-agar Jelly and Regulon are combinations of the substance with extract of cascara sagrada; that Laxigen consists of agar, sugar and phenolphthalein; and that Rhamnagar consists of agar and extract of buckthorn.—*Ex.*

The Use of Oil in Abdominal Surgery

Experimental and clinical evidence has lately been brought forward of the value of introducing a sterile oil into the peritoneal cavity both for the purpose of delaying absorption of the toxins of peritonitis and for the prevention of post-operative adhesions.

Wilkie (*Surgery, Gynecology and Obstetrics*, February, 1910), in his work has found sterile vaseline oil to be one of the best agents for the purpose, for unlike most oils it can be sterilized at a high temperature without decomposing and is absolutely unirritating.

With regard to post-operative adhesions, the following are the writer's conclusions, based on experimental evidence:

1. After aseptic abdominal operations without rough handling of viscera, adhesions are little likely to form.

2. Simple abrasion of peritoneal surfaces without infection may, but seldom does, lead to permanent adhesions.

3. Infection of the peritoneal cavity may clear up and leave no permanent adhesions.

4. Abrasion of peritoneal surfaces in infective cases generally leads to permanent adhesions.

5. When denuded surfaces are left after breaking down abdominal adhesions, the introduction of sterile oil into the belly cavity lessens the chances of re-formation of the adhesions.

6. When sterile oil is introduced into the peritoneal cavity at the same time that an experimental peritonitis is produced it has very little beneficial effect on the course of the disease. Glissom has shown, however, that if the oil is introduced some hours before the infecting organisms, it exerts a distinct protective influence by raising the defensive powers of the peritoneum.

7. The ileus which occurs so frequently and is so fatal in cases of general peritonitis is partly due to a weakening of the peristaltic power of the wall of the gut by toxæmia, but added to this there is the mechanical obstruction due to multiple soft adhesions; these, indeed, are the predominating factor and can, to a large extent, be prevented by the widespread diffusion of oil between the intestinal coils at the time of operation. In addition this tends to prevent the formation of localized purulent pockets and promotes free general drainage.—*Birmingham Medical Review*.

An Excellent Investment

The two great things to be considered when investing money are, first, security for the principal, and, second, the income to be derived from such investment.

An ideal investment is specifically protected by a mortgage on properties of undoubted value and marketability, leaving a good, wide margin for shrinkage.

The points referred to are strong features of the First Mortgage Bonds of the Vancouver Milling and Grain Company, an investment offered by the well-known investment house of Æmilus Jarvis & Company, whose advertisement appears on another page. The bonds may be purchased in as small amounts as \$500, and are undoubtedly safe, while yielding the investor over 6 per cent. The Vancouver Milling & Grain Company earned nearly 25 per cent. net on their capital stock last year, and will earn much more than that this year.

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Original Communications

ON THE COMMONER TYPES OF FUNCTIONAL CARDIAC MURMURS*

BY W. S. THAYER, M.D.

Professor of Medicine, Johns Hopkins University.

The question as to the significance of cardiac murmurs is often one of the gravest which is brought before the physician—and the surgeon. Examiners for insurance companies, medical boards of the army and navy, school physicians, surgeons on the eve of an operation meet daily with individuals in whom there are detected cardiac murmurs of varying character, unassociated with evidences of functional disturbances. And if, in the course of the examination, the patient gains knowledge that he has a cardiac murmur, the question as to its nature and significance is often referred to one or more colleagues of the original examiner. The experienced clinician, meeting with many such cases, learns soon to pass almost unconsciously over the commoner and more obviously unimportant of these murmurs, making, perhaps, no comment on them even in his private records, and is genuinely surprised to find that his younger and less experienced colleague is unfamiliar with that which to him is too obvious to mention. He forgets that it is only long clinical experience that brings confidence in such matters, and that, under the imperfect methods of clinical instruction which have prevailed in the past, and unfortunately still prevail to a considerable extent in America to-day, a large proportion of physicians enter their profession with a very limited practical experience.

*Read before Academy of Medicine.

Upon the subject of "functional," "accidental," "anæmic," or "hæmic" murmurs, as they may chance to be called, there is a large literature, rich in observation, but especially rich in hypothesis. In many of the studies the hypothetical considerations have overshadowed the clinical description.

It cannot be denied that there are many cases in which the significance of a murmur can be determined only by time and observation. That, however, which seems to me to have been hardly enough emphasized is that there are certain clinical pictures of functional cardiac murmurs, which are really rather easily recognizable. To consider some of these commoner pictures is the main object of the present communication.

What is the significance of a cardiac murmur in general? By what mechanism are cardiac murmurs produced? Rather broad questions, one may say; and yet the questions may, I believe, be answered in a relatively simple manner. The overwhelming majority of cardiac murmurs are probably the result of fluid veins arising beyond a point of constriction, or just beyond a more or less fixed point through which the blood passes into a vessel of considerably larger size, or capable of greater distension. At such points it is obvious from the simple physical consideration that murmurs should arise the more readily the more rapid the current and the less viscous the fluid; and, moreover, that they should be transmitted in the course of the current.

Nothing is simpler than the illustration of these points to a class by means of rubber tubes attached to a water tap. The character of the murmurs which arise with stenoses or insufficiencies of the four cardiac orifices are familiar enough to all, and the explanation of their manner of origin and conduction is simple enough. The manner of origin and the conduction of all the ordinary cardiac murmurs, with the exception of stenoses of the auriculo-ventricular orifices, may be illustrated in the living dog's heart as clearly as with a rubber tube, and I know few demonstrations more illuminating than the production of an artificial mitral insufficiency, where one may hear, on auscultation, a soft systolic murmur at the apex of the left ventricle, while in the left auricle, immediately beyond the valves, there is a marked thrill and a murmur of the very highest degree of intensity.

If it be easy to see why, in disease, murmurs arise, it is difficult, indeed impossible, to explain why at certain points in the heart murmurs *are not always present* in the normal indi-

vidual. That, under ordinary circumstances, no murmur should be produced by the entrance of blood from auricle to ventricle is, perhaps, not remarkable when one reflects upon the large size of the orifice—so large, after all, that auricle and ventricle represent in diastole practically one cavity, and the relatively low pressure under which the blood passes from auricle to ventricle. But when one considers the normal emptying of the ventricle, the structure of the aortic and pulmonic rings, and that of the vessel beyond, the wonder is not that systolic murmurs at pulmonic and aortic orifices often occur, but, as has been well said before, I think by Dr. Broadbent, that they are not always present. A ventricle contracting with considerable force, throwing a large quantity of blood through the fibrous ring at the root of the aorta or pulmonary artery, a ring which is practically indistensible, into a vessel beyond capable of great dilatation—here we have elements which one might well fancy should produce always a relative stenosis sufficient to result in fluid veins beyond the point of relative constriction, i.e., the normal ring. That, with a dilatable aorta, an unusually large quantity of blood thrown out of the ventricle with greater force through a normal ring may produce murmurs, and loud murmurs, is clearly shown in aortic insufficiency, especially in young individuals. How often, in such cases, a mistaken diagnosis of aneurism is made is familiar to all clinicians. But as we all know, there is a variety of conditions in which, without disease of the valves or muscle of the heart, murmurs are audible. Certain of these functional murmurs are so constant in their character as to be immediately recognizable. There are, it seems to me, at least three such clinical pictures.

1. The basic, commonly called “pulmonary” systolic murmur.

The murmurs, which are usually rather soft in character, and generally associated with an element of the first sound, are best audible in the third left interspace, but are often heard with less intensity, and may disappear in the erect posture. These usually limited to the recumbent position, disappearing when the patient stands up, while even at the base they are of considerably less intensity, and may disappear in the erect posture. These murmurs are greatly intensified, often becoming loud and rough on forced expiration. On inspiration, however, they become feebler, and when the breath is held after a deep, full inspiration, the murmur usually vanishes. Such murmurs, absent at all other times, may be brought out in a considerable number of individuals by forced expiration. They are common in young

people, and are, as a rule, unassociated with any other form of cardiac-vascular abnormality. This phenomenon forms a fairly definite clinical picture, and may be readily recognized.

2. Systolic murmurs, limited to or heard with greatest intensity at the apex, but audible only in the recumbent posture.

Murmurs, such as these, are very common in healthy young men and women. They are commoner, perhaps, in nervous or thin, emotional people, but are often found in robust youths and girls. The murmurs may be very slight and feeble, or they may be fairly loud. They do not replace the first sound, which in itself is distinct, sometimes well defined, sometimes prolonged. The murmur may be transmitted for some little distance into the axilla, and is commonly accentuated in the left lateral posture; indeed, it is not infrequently heard only in this posture. On standing up, or sitting, the murmur entirely disappears. There is no further evidence of cardio-vascular defect. Such murmurs may be heard all over the cardiac area; sometimes they are loudest in the pulmonary area. In the erect posture, however, they clear up at the apex, leaving only the pulmonary systolic, which, as has been said, disappears on inspiration.

3. Cardio-respiratory murmurs.

As is well known, there has been much discussion as to the frequency of murmurs arising in the respiratory tract, but dependent upon cardiac action, and suggesting, on cursory examination, a true endocardial sound.

Potain* sought to explain all non-organic heart murmurs by the cardio-pulmonary hypothesis.

To the careful observer, the existence of cardio-pulmonary murmurs is not a question of doubt. They form, however, a definite class and are usually easily recognizable. They are commonly systolic in time, but rather late, occurring an instant after a clear-cut first sound. They are often short and of a character different on analysis from that of the ordinary soft intra-cardiac murmurs. The important point is that they are limited to one phase of the respiration, disappearing, as a rule, when the breath is held. The commonest form is that which is heard with the several beats occurring during inspiration. In these cases careful attention reveals clearly that the murmur is simply an intensification of the respiratory murmur, and sharply limited to the period of ventricular systoles. These murmurs are often more intense on effort with rapid, forceful, cardiac action, and on deep breathing.

What is of special importance is the fact that *they are often heard with great intensity in the back.*

*Clinique med. de la Charité, 8^e, Paris, 1894, Masson.

Cardio-respiratory murmurs are by no means limited to inspiration. They may occur at other phases of the respiration as well, and sometimes may be noticeable when the breath is held. In many instances, no matter at what phase of the respiration it may be present, a cardio-respiratory murmur may be recognized by a distinct difference between its timbre and that of the usual endocardial murmur, its superficial, short, rustling character, especially its lack of direct association with one of the cardiac sounds which it *accompanies rather than modifies*. This may be appreciated by making a young individual take vigorous exercise, and listening when his heart is beating rapidly and forcibly and the respiration is accelerated. Here, a short post-systolic whiff is not uncommonly heard, usually during the middle of inspiration—a sound which, on careful study, is obviously of pulmonary origin. Familiarity with the commoner post-systolic cardio-respiratory murmurs may not infrequently bring comfort and assurance to the examiner who meets with similar sounds at other phases of the respiration.

One fact which again should especially be emphasized is that cardio-respiratory murmurs are not infrequently audible in the back, and may here give rise to serious misapprehension by the unskilled observer.

Now, in addition to these three more definite types, there are observed in healthy individuals many cardiac murmurs which experience and time may and do justify the clinician in regarding on the first or on later examinations as of functional character. The judgment as to the significance of many of these sounds must be formed in the individual case. Such decisions are often of the most delicate and important duties which fall to the physician.

In a general way, murmurs which are limited to a single phase of the respiration may be regarded as of no pathological significance. Soft systolic murmurs which occur at the apex as a slight whiff, after a first sound which seems clean-cut and of a normal character, in hearts which are of normal size and without undue accentuation of the pulmonic second sound, may, as a rule, be regarded as functional, even if they do persist in the erect posture and on full inspiration. These cases, however, do not form a definite recognizable clinical picture, as in the three groups above mentioned.

Again, there are instances in which systolic functional murmurs at the apex are present in the erect posture alone and absent in the recumbent posture.

This condition on which Potain insists is, in my experience, rare. In general, however, it may be said with considerable assurance that heart murmurs, limited to a single phase of the respiration, or heard in one position of the body alone, are in the great majority of cases, quite devoid of pathological significance.

There are, however, other murmurs unassociated with essential and incurable cardiac lesions, which are commonly considered in the same class as those already mentioned. This does not seem to the writer fitting. He prefers to consider them apart, as they are after all associated with definite though perhaps not serious disease. Among these are:

1. *Those murmurs associated with anæmias of all sorts.*

These are, on the one hand: (a) Soft systolic murmurs heard at the base, more commonly at the pulmonic than at the aortic orifice, but frequently at both. In these individuals the pulse is often large and soft, and the throbbing of the arteries is generally noticeable.

(b) Systolic murmurs at the mitral and tricuspid orifices. These murmurs are also soft and blowing, sometimes, however, largely replacing the first sound. They are not infrequently transmitted to the axilla or even to the back, and the second pulmonic may be somewhat accentuated, while commonly the heart is slightly large.

2. *Systolic apical murmurs occurring especially in the course of an acute infectious disease* (acute rheumatism and typhoid fever, especially), where, however, there may be relatively little anæmia. In these patients the first sound is usually dulled, and may be wholly replaced by the murmur. Here, again, there is generally a slight cardiac enlargement; the murmur may be transmitted to the axilla and the second pulmonic may be slightly accentuated. I have considered these two conditions in a separate class, because, although there may be no valvular disease, yet the slight enlargement of the heart, the enfeeblement of the first sound, the accentuation of the second pulmonic, the behavior of the heart on exertion, justify one in assuming the existence of a true weakness of the heart muscle with dilatation of the orifices and secondary mitral and perhaps tricuspid insufficiency. The general condition of cardiac weakness and secondary mitral and tricuspid insufficiency form a picture perfectly distinct from that presented by normal individuals with cardiac murmurs of the three first-mentioned types with which we are concerned.

Systolic murmurs are not uncommon at the apex in exophthalmic goitre. But here, again, there is generally a distinct cardiac enlargement, and there is much evidence to lead one to believe that these murmurs are the result of true insufficiency of the mitral ring, dependent upon dilatation.

TRANSIENT AORTIC AND PULMONARY INSUFFICIENCY.

Before discussing the *raison d'être* of these various functional murmurs, it may be well to say a word as to the occurrence of murmurs indicating aortic and pulmonary insufficiency in the absence of disease of the valves. Aortic insufficiency of muscular origin is only to be recognized by prolonged observation of the case. The writer has, however, met with a number of cases sufficient to convince him of its actual occurrence.

In two instances after typhoid fever, he has seen the development and disappearance, with complete convalescence, of a characteristic murmur of aortic insufficiency, associated with slight cardiac enlargement, and a noticeably collapsing quality of the pulse.

He has also met with a similar condition in two cases of exophthalmic goitre. Both of these cases are sufficiently remarkable to deserve a brief note.

The first case was that of a trained nurse, who, showing marked symptoms of exophthalmic goitre, consulted with me with regard to operation. As there was evidently double mitral valvular disease, together with an aortic insufficiency, operation was not advised. The wise patient, however, took matters in her own hands, and repaired to Dr. Olmstead, of Hamilton, who performed a thyroid dectomy, which resulted in complete recovery. On examination of the patient some six months later, I was surprised to find that all traces of aortic insufficiency had disappeared. This nurse has since then been doing active work for ten years. Last year I had the privilege of examining her again, and found evidence of old, double mitral disease in perfect compensation, but no signs of an aortic insufficiency.

The second case was that of Mrs. S., aged 38, who first entered the hospital in March, 1901, with distinct symptoms of exophthalmic goitre. No cardiac abnormality was noted. She returned in June, 1905. At this time there was some irregularity of the heart and a slight systolic murmur all over the area. The cardiac apex was 10 cm. from the median line. The urine showed a trace of albumen and a few hyaline and finely granular casts.

Two years later, in November, 1907, I saw the patient again. Dyspnea and œdema of the feet had come on nearly a year before, and had been gradually increasing. She was anæmic;

the pulse was collapsing and rather irregular, about 100. The heart was large, the apex impulse 12 cm. from the median line. There was a systolic murmur heard all over the cardiac area, loudest at the base and transmitted upwards into the carotids. A slight diastolic murmur was distinctly heard along the left sternal margin. The second pulmonic sound was accentuated.

The patient entered the hospital, where she remained for nearly three months. Rest was followed by but little improvement. The heart increased in size, the apex impulse being recorded as $14\frac{1}{2}$ cm. from the median line. The urine showed a trace of albumen and a few hyaline and granular casts.

In December and January a large part of the thyroid was removed in two operations. This was followed by some improvement, but the œdema never wholly disappeared. At the end of February she left for home improved, but in a condition far from satisfactory. At the time of departure the apex impulse was $14\frac{1}{2}$ cm. from the mid-sternal line. The systolic murmur was still heard all over the area, but the diastolic murmur was no longer audible.

About nine months later I saw the patient again in Atlanta. She had improved in many ways, was able to walk about and was free from œdema. The heart was somewhat irregular, about 100. There were no cardiac murmurs, but there was a slight proto-diastolic gallop at the apex. In October, 1909, a year later, she walked into my consulting-room, apparently well. Her pulse was still a little rapid, about 100, and somewhat irregular. The apex was two or three cm. nearer the median line (11.5-12). There was a soft basic systolic murmur barely audible, but no murmur at the apex, and no trace of a diastolic murmur at the base or along the sternal border.

A most interesting case of similar character, following tonsillitis and polyarthritis, I met with last year. J. L., a colleague and friend, consulted me on Sept. 3, 1909. He had been in bed for two weeks with polyarthritis, following tonsillitis. He looked pale and worn-out. I had examined his heart about a year before and found no abnormalities. On this occasion the pulse was slightly abrupt, and the heart a little large. The apex impulse was in the fifth space, 9 cm. from the median line, while the dulness extended 4.2 cm. to the right. There was a slight diastolic murmur in the aortic area and along the left sternal border, although the second aortic sound was fairly sharp. An endocarditis was feared. A month later, however, the heart was somewhat smaller, the pulse no longer collapsing, and the aortic murmur was wholly gone. Six months after this he was in good

general condition. The apex was 8 cm. from the median line; a soft systolic murmur was heard all over the cardiac area in the recumbent position, disappearing at the apex in erect posture and at the base on deep inspiration. The diastolic murmur had remained absent.

The observations of Hugh A. Stewart* have proven the importance of the part played by the ring of muscle below the aortic valve in the closure of the orifice. And just as Stewart has been able to produce an aortic insufficiency by mechanical injury to this ring of muscle without lesion of the valves, so in some cases it is but natural that a weak and diseased heart muscle should result in aortic as well as mitral insufficiency.

Pulmonary insufficiency, independent of valvular disease, is also a condition commoner than has been generally recognized. It is met with, as Graham Steel has pointed out, in connection with cases of dilatation of the right ventricle, usually following old mitral disease, and is associated with a soft diastolic murmur heard along the left sternal margin, in much the same area as that occupied by the murmur of aortic insufficiency. The murmur has also a similar character. One may suspect the nature of such a murmur by the absence of other signs of aortic disease (character of the pulse and of the second aortic sound at the base and in the carotids), the presence of marked dilatation of the right ventricle, and sometimes by the disappearance of the sound with improvement in the patient's condition. That such murmurs may be associated with dilatation of the pulmonic orifice, in absence of aortic changes, has been proven frequently by necropsia. Two cases of this character have already been demonstrated at our clinical and pathological conference during this term. It goes, however, without saying that these murmurs are indicative of pathological changes in the heart muscle—changes from which there may be improvement, and perhaps, indeed, actual recovery, as in some cases of exophthalmic goitre or after acute infections. They do not, however, represent purely functional murmurs in normal individuals.

Let us then return to the commoner forms of truly functional murmurs in normal individuals, viz.:

1. The basic "pulmonary" systolic murmurs.
2. The apical systolic murmurs disappearing in the erect posture.
3. The cardio-respiratory murmurs.

From careful observation we know that these murmurs have

*As yet unpublished.

practically no pathological significance. Can we explain their appearance?

As to the first form—the basic systolic murmurs over the conus or pulmonary artery—there are various possibilities. As has been said, the structure of the pulmonary artery and orifice, as well as that of the aorta—a practically indistensible fibrous ring, with a highly distensible vessel beyond—is such that it is remarkable that systolic murmurs are not always present.

McCallum and I* have observed that in dogs it is extremely easy to produce a systolic murmur just beyond a pulmonic ring, following hæmorrhage. Here the excursions of the pulmonary artery were generally very large; in other words, the vessel was relaxed or the volume of blood thrown into the vessel with each systole was large. This was also true in cases where, after hæmorrhage, salt solution had been infused. Under these circumstances, also, the ventricular action appeared to be rather abrupt. Now, in anæmia, in general there is a rather low blood pressure. Furthermore, the changes in the blood itself might be expected to favor the appearance of murmurs (diminished specific gravity and viscosity). Especially important, however, the rate of blood flow per minute is greatly increased; more than this, the volume of blood thrown into the vessels with each ventricular contraction is larger than under normal circumstances. The conditions, then, which are present in anæmia—increased quantity of blood thrown with each systole through the aortic and pulmonary rings, which, as has been said, are more or less indistinguishable, the changes in the blood itself, and the relaxed condition of the vessels—are exactly those which one might postulate for the production of basic systolic murmurs.

The explanation, then, of systolic murmurs at aortic and pulmonary areas in anæmia is simple enough.

It is a question, however, whether any of these conditions play a part in the production of the basic murmurs so common in healthy young individuals. It is significant that these murmurs are heard on the left side of the sternum, and in the third space, rather below the pulmonary orifice. It is also remarkable that they are increased or induced by expiration, and diminished or obliterated by inspiration. These facts suggest another explanation.

Now McCallum and the writer observed that in dogs with

*Experimental studies on cardiac murmurs. *Am. J. M. Sc., Phila. & N. Y.*, 1907, cxxxiii., 249.

†(Bestimmung des Herzschlag volumens. *Deutsche med. Wchuschr.*; 1909, xxxv., 239 Also Sauerstoffversorgung und Zirkulation in ihren kompensatorischen Wechselbeziehungen. *Verhaude. d. xxvi. Kong. f. inre. Med., Wiesb.*, 1909, 209.

an exposed heart it is extremely easy to produce a murmur by very light pressure on the *conus arteriosus* with the bell of the stethoscope. Such pressure resulted in a thrill and murmur beyond this point. May it not be, then, that the pressure exerted by the chest wall against the pulsating *conus arteriosus* may often be sufficient to result in such a murmur? With inspiration the interposition of a cushion of air-containing lung equalizes the pressure, removes the cause, and the murmur ceases. With age and increased volume of the lungs, the murmur is less frequent. This hypothesis, while unproven, has seemed to me that which is most applicable to the condition. Janeway, ‡ in a discussion of our paper, calls attention to the frequency of expiratory systolic murmurs at the base of the heart, and suggests that they are due to pressure.

The cause of the *cardio-respiratory, inspiratory systolic murmurs* is obvious enough. The reinforcement of the inspiratory murmur with each systole is due to the accentuation of inspiration during the ventricular contractions, and the sound dependent on this ought to be more marked, the more forcible and abrupt the contraction and the larger the quantity of blood expelled. As has been said, exercise may and often does exaggerate this phenomenon markedly.

As to the cause of the *systolic apical murmurs* heard in the recumbent and left lateral posture, the writer can only express an opinion quite in agreement with that of Henschen,* but unsupported by experimental evidence. I have always regarded these murmurs as indicative of a true mitral insufficiency because of the location in which they are heard, because of their occasional transmission outward, and because of the general similarity of the sound to that heard in true mitral insufficiency. Such a mitral insufficiency, dependent on position alone, if it be a mitral insufficiency, is, however, a perfectly normal phenomenon.

Whatever the cause of these phenomena, it seems to me that these three forms of murmurs:

- (a) The basic systolic murmurs increased on expiration;
 - (b) The apex systolic murmurs limited to the recumbent posture;
 - (c) The cardio-respiratory, inspiratory systolic murmurs;
- form three clinical pictures which are fairly distinct, and apparently of no pathological significance.

‡Tr. Ass. Am. Phys., Phila., 1906, xxi., 61.

*Über systolische funktionelle Herzgeräusche. C. M. xvi. Cong. internat. de méd. Budapest, 1909, vi., med. interne, fasc. I., 221.

Frequency.—How frequent are these murmurs in normal individuals? Basic systolic murmurs are, as is known, extremely common. It would be interesting to know how often it might be possible to produce these murmurs by forced expiration in a given number of individuals. The writer, however, has no figures to offer based on any large number of observations.

Cardio-Respiratory Murmurs.—Cardio-respiratory murmurs, of the kind of which we have spoken, are not rare, but by no means as frequent as the last-mentioned class.

A point of particular interest and importance is the frequency with which systolic apical murmurs of undoubtedly functional character are audible in practically normal individuals.

Last year the writer had occasion to examine a large number of healthy young people in connection with studies on the third heart sound. In all these individuals, special note was made as to the presence of systolic murmurs disappearing in the erect posture. Of 218 cases in the first four decades of life, 73, or about one-third, showed systolic murmurs at the apex in the recumbent posture, murmurs which disappeared in the erect attitude. As a rule, these murmurs were heard all over the cardiac area, but loudest at the base in the pulmonary area.

The following table illustrates their frequency by decades:

TABLE SHOWING THE FREQUENCY OF APICAL SYSTOLIC MURMURS
IN HEALTHY INDIVIDUALS.

Decades	1	2	3	4
Cases	39*	98	55	26
Murmurs present	22	35	12	5

It will be seen that in the first decade, 56 per cent. of these individuals showed systolic apical murmurs in the recumbent position; 35 per cent. in the second decade; 21 per cent. in the third; 19 per cent. in the fourth. These murmurs were, of course, usually associated with the common basic systolic murmur, of the presence of which no special note was made.

Especially interesting are the statistics of the examination of thirty robust boys, who were studied at one of the best-conducted of schools situated in the country just outside of Baltimore. These boys were all in the second decade and in apparently excellent physical condition. In none of them was there elicited the slightest evidence of cardiac involvement from subjective systems, from the size and action of the heart under ordinary tests, from the blood pressure or from other auscultatory signs.

*There were no cases under three years of age.

Eighteen of these thirty boys, however, showed cardiac murmurs of one sort or another. In thirteen a soft systolic murmur was heard all over the cardiac area when in the recumbent or left lateral posture.

Three showed basic systolic murmurs, disappearing on full inspiration.

One showed a basic systolic murmur present in the recumbent posture alone.

One showed a basic systolic with no evident change on respiration. This, from its character and position and from the absence of any other suggestion of cardiac involvement, was regarded as certainly functional.

To many, perhaps, the considerations which I have brought forward this evening may seem *altbekanntes*, and yet the number of men who are refused by insurance and mutual benefit organizations, whose career is cut short in army and navy because of a lack of appreciation by over-conscientious examiners of just these points, is really large.

In one year, the writer had had occasion to examine fourteen young men between the ages of eighteen and twenty-four, the condition of whose hearts had been questioned by the careful examiners of applicants for a certain well-conducted organization. In one of these subjects there were marked extra-systolic irregularities. One was a nervous young man with a rather rapid heart. All the others, twelve in number, showed various forms of the three types of functional murmurs of which we have spoken, without other serious evidence of cardiac defect.

Such experiences emphasize the fact that it is important to realize that cardiac murmurs are, in many instances, normal phenomena, that under some circumstances and conditions they are to be expected in normal individuals, and that certain of these truly functional murmurs are not difficult to recognize and to account for.

It is also important to distinguish these true functional murmurs from those other murmurs to which the same term is often applied, murmurs which depend on valvular insufficiencies due to pathological weakness of the heart muscle.

Lastly, it is well to remember that 'tis only when murmurs occur in certain localities or in more or less definite relation to the heart sounds, or when they are associated with evident anatomical or functional derangement, that they are necessarily of pathological significance.

In conclusion, then, the writer would urge:

(1) That a cardiac murmur is but one, and sometimes an unimportant one, of the links in the chain of evidence leading to the recognition of disease of the heart.

(2) That certain cardiac murmurs are present normally in a large proportion of healthy young people.

(3) That the commoner forms of these murmurs are:

(a) The basic systolic murmurs heard best in the 3rd left interspace and often all over the area in the recumbent posture, and disappearing on full inspiration.

(b) The systolic murmurs, sometimes limited to the apex, sometimes heard all over the cardiac area in the recumbent posture—disappearing in the erect posture.

(c) The cardio-respiratory-inspiratory murmurs.

(4) That the truly functional murmurs—those heard in healthy individuals—should be carefully distinguished from those other murmurs which may arise at various orifices without actual valvular disease, but, nevertheless, as a result of pathological changes in the heart muscles or in the blood: *i.e.*, the anæmic murmurs—the murmurs, systolic and diastolic, dependent upon weakness of the heart muscle.

(5) That a familiarity with the cardiac murmurs common in the normal individual is at least as important as an acquaintance with those murmurs which are associated with cardiac disease.

THE VAGARIES OF FIBRO-MYOMATOUS TUMORS.*

BY DR. MARQUIS, BRANTFORD.

I regret that, owing to the shortness of the notice, it was impossible to prepare such an address as befits the occasion, and I offer my apologies for the imperfect presentation of the subject. I decided to look back into the years that have gone, and endeavor to pick out some points that may prove of value in a consideration of the effects of fibro-myomatous tumors upon the life history of women.

It was my privilege, in 1878, to hold the position of house-surgeon at the Toronto General Hospital; that is now 32 years ago. It is interesting to watch the evolution of practice that has taken place in that time, and there is no department in surgery in which the changes have been more varied or the practice has been more improved than in the surgical treatment of fibro-myomatous tumors.

During a pilgrimage to the Mecca of abdominal surgery—Birmingham—about the year 1889, I had the privilege of assisting that great pioneer, Mr. Lawson Tait, with many of his operations during a period of some months. While ovariectomy for the removal of ovarian tumors had been perfected so that the mortality was greatly reduced, the operation of hysterectomy for the removal of myomatous tumors was still in its infancy, and was an operation accompanied by a very great mortality; the mortality was so great that one Edinburgh surgeon looked about him for some other remedy than the knife, and he began the use of the electric current, as advocated by Apostoli, of Paris. After much investigation and careful trial, this treatment was not satisfactory, and proved to be at times dangerous, owing to the degenerative changes that it was liable to set up in the tumors. Many of us looked about for some improvement of surgical technique, and eventually the operation at present adopted was evolved, and is now performed with as low a mortality, in skilled hands, as the operation of ovariectomy. It is my opinion that such operations should only be undertaken by men of special training, in well-equipped operating-rooms, under the most advantageous circumstances. About the year 1890 the operation was performed with the assistance of the Koeberle *serre-noeud*. Tait used, as a primary precaution against hæmorrhage, a rope clamp, of which the rope was made to encircle the tissues about the cervix, after the peritoneum,

*Read at Brant County Medical Association.

together with the bladder, had been stripped down off the tumor surface; the Koeberle serre-noeud was placed so as to constrict the cervical structures, taking care to avoid the ureters, and after a severance of the ovarian and uterine arteries. The serre-noeud produced constriction of the stump and gangrene of its distal portion, notwithstanding the tanning effect produced by the application of perchloride of iron dissolved in glycerine. The patient did well until about the sixteenth or seventeenth day, when a leakage took place from this foul mass into the general cavity of the peritoneum, and a general septic peritonitis resulted, followed very shortly by the death of the patient. Even after recovery from such an operation, an immense funnel-shaped granulated opening was left, through which a subsequent protrusion of the intestine took place. This was certainly anything but ideal surgery. We then became bolder and found that a direct dissection down on to the vessels enabled us to control the hæmorrhage, and that the use of catgut sutures to the stump controlled any little oozing that might be caused owing to a lack of ligation of the azygos vaginæ artery. The operation was then still further improved by a readjustment of the cut peritoneum over the surface of the stump, so that the stump became, with the ligatures applied, practically extra-peritoneal. At first it was considered desirable to place a drainage tube in the cul-de-sac of Douglas, but in later years even this was found to be unnecessary. In my hands and those of my assistants, these operations have now become entirely satisfactory, and the mortality is almost nil. It is essential, of course, that the operator should see to it that all hæmorrhage is properly controlled before the abdominal cavity is finally closed. There is another point in favor of operation, namely, the fact that the tumors are not now allowed to grow to the gigantic proportions of those tumors formerly met with, and, furthermore, we do not have such extensive adhesions to deal with. As a consequence of the great success of the modern operations, I fear the pendulum has swung rather too far to the other extreme, and that now young women are practically unsexed, and are denied the opportunities of motherhood owing to the rather ruthless use of the knife on fibroid tumors as soon as they make their appearance. As fibroid tumors have vagarious ways, it is desirable that we should be fully aware of these peculiar changes, in order that we may deal with these cases more intelligently. Let us take up the question systematically.

POSITION.—Fibroid tumors have been named according to their position. The classification adopted has been sub-peritoneal,

intramural, and submucous. We have also myomatous tumors, growing from the myomatous structures about the cul-de-sac of Douglas, in the broad ligament and in front towards the bladder. We have also fibroid tumors, growing in either the anterior or posterior lip of the cervix.

(a) *Sub-peritoneal Tumors*.—Sub-peritoneal tumors seem to have certain characteristics not met with as frequently as in the others; they have a tendency to become pedunculated, and may often be found roughened on the surface owing to calcareous degeneration, and, as a consequence of this, they may produce intraperitoneal dropsy that simulates the dropsy found accompanying malignant disease in the peritoneal cavity; they may become fixed to other organs, and may eventually derive their blood supply through the adhesions in the new situation; they may become twisted and gangrenous, or gangrenous owing to thrombosis of the vessels.

(b) *Intramural Tumors*.—Intramural tumors frequently give rise to menstrual pains and increased menstrual flow before they can be made out by the examining finger. When the uterus of a young unmarried woman is found somewhat enlarged, and when this enlargement is accompanied by menstrual pain and increased flow, we must suspect the presence of an intramural fibroid. The ultimate destiny of the intramural variety is generally subperitoneal or submucous, as the constant contraction during menstruation, producing the pain already spoken of, tends to force the little nodule outwards or inwards.

(c) *Submucous Tumors*.—The submucous variety may be very small, or may be large enough to simulate pregnancy at the fourth or fifth months, or even later. I have on two occasions been forced to dilate the cervix and introduce my finger into the uterus to satisfy my mind that the case was one of large submucous fibroid, filling the uterine cavity, before proceeding to amputate the uterus supravaginally through the abdomen. I have seen similar cases in the practice of others, and on two occasions they simulated a pregnancy at full time. In each of these the abdomen was closed, as the operators felt they had made a mistake, and that the cases were cases of pregnancy; and in each case, a few days later, the uterus was removed by a second operation, thus readily demonstrating how such submucous oedematous growths can simulate pregnancy. Many of the submucous growths cause alarming hæmorrhages and continued ill-health; eventually they may become polypoid, and may be extruded from the uterine cavity into the vagina, or forced

outside the labia. I removed, at intervals covering several years, three such polypi from one patient.

(d) *Other Varieties*.—Those growing in the neighborhood of the cul-de-sac of Douglas, either in front or behind the rectum, become a very serious bar to delivery, and I have performed Cæsarian section on three occasions owing to the presence of this condition. Growths growing in the cervix, either in front or behind, may also become a serious menace to delivery; I have, however, seen such large growths gradually compressed and pushed above the pelvic brim, and the patient delivered without mishap, when we were quite prepared to perform Cæsarian section. Tumors growing in the anterior lip of the cervix produce serious bladder disturbances, retention of urine being one of the most common of these. The removal of growths situated either in front or behind the cervix, or in the cervix itself, is necessarily fraught with much danger; in front, damage to the ureters; behind, damage to the pelvic vessels. On one occasion I was forced to remove a tumor growing in the anterior cervical lip and causing retention of urine, and after the removal there was an opening in the vagina large enough to admit a fist. The patient was prepared for death upon the table, but fortunately rallied from the shock and made a good recovery, contrary to the expectations of all those connected with the case.

CHANGES IN THE TUMOR.

Congestion.

Œdema.

Cystic degeneration.

Necrosis, with or without suppuration.

Calcareous change.

Malignant disease.

(a) Myxomatous degeneration.

(b) Sarcomatous degeneration.

Congestion.—No matter where situated in the pelvis, fibroid tumors are affected by the presence of an intra or an extra uterine pregnancy and by menstruation. In either of these conditions, the capsule of the tumor carrying the blood supply becomes much congested, and, as a consequence, for the time being, the tumors increase in size. Owing to the fact that pregnancy is continued over a period of nine months, the congestion remains continuous, and the growth of the tumors is much greater; the menstrual congestion coming on but for a short time, and ceasing, does not add so rapidly to the size. In cases of pregnancy, I have often considered that it is a race between

the fœtus and the growth as to which can grow the faster. It is well to remember that ovarian tumors frequently cause a temporary cessation of menstruation, and that when such a temporary cessation of menstruation occurs in the presence of a fibroid tumor before the menopause, it is always due to pregnancy. This is an important point, as under such circumstances the uterine sound should not be used. It is oftentimes the unexpected that happens, and a woman with a fibroid tumor may go for years without becoming pregnant, and may then suddenly miss a menstrual period. When examination is made, the tumor will be found softened and considerably enlarged.

Oedema.—The œdema of fibro-myomatous tumors is an extraordinary condition, not seen anywhere else in the body; fluid is poured out in the meshes of the myomatous tissue, and a separation of the long involuntary muscle fibres takes place; the tumor looks as if waterlogged, and on the surface has a sense of false fluctuation; this sense of fluctuation so closely simulates genuine fluctuation that the presence of disseminated and not encysted fluid can oftentimes only be made out by an incision into the tumor. The cause of this œdema, outside of that form that accompanies myxomatous degeneration is not very well understood unless it is due to an obstruction of the blood supply or a damming back of the venous circulation. I have seen one such tumor 60 pounds in weight. I saw another enormous tumor removed from a woman in England, where it seemed as if the woman was peeled away from the tumor, and I have myself removed a tumor of upwards of 40 pounds in weight. We do not see these œdematous tumors as frequently now as we did a few years ago, owing to the fact, as already stated, that hysterectomy and ablation of the growth is not fraught with such a high mortality, the mortality having now been reduced, in skilled hands, to equal that of ovariectomy. It is extremely difficult to say when the œdematous tumors are myxomatous and malignant and when they are simply myxomatous and innocent. I always feel suspicious of the malignancy of an œdematous fibro-myoma. In the cases in which I have seen the disease return in the form of pseudo-myxoma in the peritoneum, there is nothing to indicate that the tumor was malignant at the time of its removal. A microscopical examination should be made of all œdematous fibro-myomata removed.

Enormous œdematous fibro-myomatous tumors may entirely disappear, or almost entirely, subsequent to the onset of the menopause. I have a distinct recollection of two patients who

had such œdematous tumors; one of them declined to submit to surgical measures until after the marriage of her daughter. She was confined to the house for about two years with terribly swollen limbs and enormously distended abdomen. She subsequently recovered perfect health, and it is not long since I met her, a very active woman for her age. The other woman was an invalid for several years, and the tumor, in her case, similarly disappeared, and she was restored to health. Of course it is a terrible penalty to pay, and we do not always have such a favorable termination; but these patients were seen before the days when supravaginal amputation of the uterus had such a small mortality as at the present time, and surgeon and patient alike dreaded operative interference.

Cystic Degeneration.—The cystic degeneration of these tumors is not a true cystic degeneration originating in glandular structure. Small hæmorrhages take place here and there into the substance of the tumor, and these hæmorrhages are followed by the formation of cysts. There seems to be a difference between ordinary cystic degeneration of fibro-myomatous tumors and the true fibro-cystic tumors of the uterus. Cystic tumors of the uterus are very rarely met with, whereas cystic degeneration of fibroid tumors is not infrequent; in either case, these growths require to be removed, as they have a tendency to increase in size or to undergo necrotic change. I have seen but two cases of marked fibro-cystic tumors of the uterus, and we have not a single specimen in our Pathological Museum. I removed one such tumor from a negress in one of the hospitals in Pittsburg some years ago, and the other tumor I saw removed by Mr. Lawson Tait.

Necrosis, With or Without Suppuration.—This is a very serious condition, and imperils life. The first case of necrosis of a fibroid tumor I met with was one into which a hand and arm had to be introduced through the vagina and up into the tumor to dislodge the broken-down tissue. The patient made a very slow, but excellent, recovery. Necrosis occurs as a consequence of thrombosis of the blood vessels. This thrombosis seems to be produced by excessive congestion and increased coagulation of the blood, such as occurs in pregnancy; by pressure produced by uterine contractions subsequent to the administration of ergot; by constriction of the pedicle of a myomatous polypus; and by a disturbance of the parts such as is unavoidable in the performance of an abdominal operation. I have seen numbers of cases of gangrene and necrosis of fibro-myomatous tumors

before and after delivery. When it occurs before the delivery of the patient the condition is particularly dangerous. These patients are liable to become pyæmic and to lose their lives. If delivery has taken place, there is then a chance that the contents of the sloughing tumor may be extruded, and that the sloughing tumor may be reached by the surgeon. The treatment under such conditions should consist in as thorough a cleansing of the parts as possible, and a removal of as much of the necrotic tissue as possible. The antiseptic that is perhaps most serviceable is bichloride of mercury. This should be used as a douche into the uterine cavity once or twice a day, and perhaps it may be considered advisable to pack the uterine cavity with iodoform gauze. A hysterectomy under such circumstances is not to be thought of. To open up by incision a large area necessary in performing this operation, in the presence of a fœtid and extremely poisonous gangrene, is very unwise. When, during pregnancy, a tumor becomes necrotic, an abdominal hysterectomy will give the best results and is then indicated. Operation must not be long delayed if we hope to save the patient. Necrosis in such cases is generally indicated by a sudden tenderness over the tumor, accompanied by high elevation of temperature, and in all probability with chills, together with increased pulse rate and sudden rapid increase in the size of the growth. The necrosis of fibro-myomatous tumors is liable to occur after the removal of ovaries and tubes, or, in other words, after the operation of oophorectomy for fibroid; sometimes the tumor becomes inflamed under such circumstances, but does not become completely necrosed. After the removal of a fibroid tumor I have been surprised on a number of occasions to find evidence of old necrotic changes. When polypi are extruded from the cervix or from the vagina, they are liable to become gangrenous. In the early stages of such gangrene, the tumor simulates very closely malignant growth, and it is necessary for the surgeon to discriminate between the two. In either case, there is a very considerable malodorous discharge, frequently tinged with blood, poured out from ulcerated areas. When such tumors have been removed the differential diagnosis can readily be made by making an incision into the tumor substance, and by examining a section of the tumor under the microscope. These polypi can be very readily removed, as the thrombosis of the vessels at the pedicle prevents hæmorrhage, provided the pedicle is separated below the upper limit of the occlusion of the vessels. I have seen such black tumors as large as a man's head, between the thighs, entirely outside the labia. The so-called red

degeneration is nothing more nor less than the early stage of necrotic change; the tissue has the appearance of being acutely inflamed, and hence looks red.

Calcareous Degeneration.—Calcareous degeneration is more frequently found in the sub-peritoneal variety of fibro-myomatous growths. These growths become roughened on the surface, and, owing to the presence of intraperitoneal fluid, they are liable to simulate malignant disease. They may be found bobbing about in the fluid, and may, as a consequence, feel much like fetal parts. I have several times operated on such growths when a diagnosis of probable malignancy had been made, and we were afraid that operative interference would be useless. Under such circumstances it is always wiser to open the abdomen. When the tumors are removed, often by means of ligatures around the pedicle, the peritoneal dropsy disappears and the patients resume a normal condition.

Malignant Change.—Myxomatous degeneration in fibro-myomatous tumors is, in my experience, fairly common in proportion to the number of cases that undergo malignant change. I have never seen any other malignant change than myxomatous degeneration and sarcomatous degeneration. Myxomatous degeneration is particularly prone to recur after removal of the tumor. This recurrence presents some interesting features: the peritoneal surface of the intestines and the parietal walls appear as if injected with gelatine; the bowels become stiffened and partly rigid as a consequence of this thickening of the coats; the disease has been called pseudo-myxoma-peritonei. The patients gradually become weaker and weaker, and finally die with some of the symptoms of intestinal obstruction. When sarcomatous degeneration occurs in the tumor, the tumor becomes rapidly enlarged; there may be some elevation of temperature, the patient's general health is not particularly affected, and there are no other changes to be noted; it is only after the tumor has been removed, and has been cut into, that the sarcomatous change is determined; the microscope then completes the diagnosis. After the removal of the tumor the patients may be free from recurrence for a considerable time, or the disease may recur at an early date. I have never seen carcinomatous degeneration of a fibroid tumor, but feel satisfied that when carcinomatous disease is met with in the presence of a fibroid tumor it is merely a coincidence, and has nothing to do with the presence of the fibroid. I have always found the carcinomatous growth growing definitely from the glandular structures of the endometrium.

In the presence of pregnancy, fibro-myomatous tumors do not seem to have any particular tendency to produce miscarriage. When it is considered desirable to empty the uterus owing to existing circumstances, it is usually necessary for the surgeon to procure an abortion. I have found it desirable, after one or more consultations, to produce miscarriage in a number of cases. If a young woman has had no children, and is troubled with a small myomatous tumor, I believe that, in most cases, when the tumor has reached an important size, miscarriage should be produced, and, as a consequence, she should be given the benefit of the subsequent involution. Many fibro-myomatous tumors disappear after the first miscarriage; I have seen them disappear after labor at full term; in fact, they disappear, or almost disappear, as a consequence of the process of involution. If a woman has not had progeny, and, on the other hand, is willing and anxious to submit to Cæsarian or Porro-Cæsarian operation at any time when it is found to be necessary or desirable in order that the life of the mother or of the mother and child shall be saved, her wish should be gratified. Under modern conditions, Cæsarian operation may be safely performed; but it must be remembered that it may be necessary, in the presence of fibroid tumors, to perform the Porro-Cæsarian operation in order to control hæmorrhage, and thus remove from the woman all chance of subsequent motherhood. I have advised young women with fibroid tumors of small size to become married, as a prophylactic measure, with the hope that either childbirth or miscarriage would be beneficial by checking the growth of the tumor. To illustrate my point, let me state further that my first experience was obtained by a rather rude awakening. A missionary lady from Africa, between 35 and 40 years of age, married. I saw her, in consultation with the late Dr. J. E. Graham, and we found a pregnancy nestled in between three large fibroid tumors. Miscarriage was produced, and I asked her to return at a subsequent date in order that I might remove the uterus. During the process of involution she was advised to take a certain treatment, and the treatment got the credit for what occurred. The tumors almost entirely disappeared; she again became pregnant and was delivered of a living child. Surely this should be a warning to those who advise the removal of small myomatous growths. It is argued that these growths should be removed for fear that they may become malignant. I consider that this is erroneous teaching, as the growths seldom become malignant, and to prevent carcinomatous disease of the

uterus by surgical intervention we would be forced to remove the organ from every woman. After the child-bearing period is passed, and after the growth has reached such proportions that the chances of motherhood are nil, then I believe the surgeon is justified in operating. In patients who have been suffering great loss of blood from time to time, I have been able to tide them over until the coming polypus has made its appearance, when its removal cures the patient, relieves her of her symptoms and restores her to health.

Selected Articles.

THE FAITH THAT HEALS.

BY WILLIAM OSLER, M.D., F.R.S.,

Regius Professor of Medicine, Oxford University.

Nothing in life is more wonderful than faith—the one great moving force which we can neither weigh in the balance nor test in the crucible. Intangible as the ether, ineluctable as gravitation, the radium of the moral and mental spheres, mysterious, indefinable, known only by its effects, faith pours out an unfailing stream of energy while abating not jot nor tittle of its potency. Well indeed did St. Paul break out into the well-known glorious panegyric, but even this scarcely does justice to the Hertha of the psychical world, distributing force as from a great storage battery, without money and without price, to the children of men.

Three of its relations concern us here. The most active manifestations are in the countless affiliations which man in his evolution has worked out with the unseen, with the invisible powers, whether of light or of darkness, to which from time immemorial he has erected altars and shrines. To each one of the religions, past or present, faith has been the Jacob's ladder. Creeds pass; an inexhaustible supply of faith remains, with which man proceeds to rebuild temples, churches, chapels and shrines. As Swinburne says in that wonderful poem, "The Altar of Righteousness":

God by God flits past in thunder, till His glories turn to shades:
God to God bears wondering witness how His gospel flames and fades.
More was each of these, while yet they were, than man their servant
seemed:
Dead are all of these, and man survives who made them while he
dreamed.

And all this has been done by faith, and faith alone. Christendom lives on it, and countless thousands are happy in the possession of that most touching of all confessions, "Lord! I believe; help Thou my unbelief." But, with its Greek infection, the Western mind is a poor transmitter of faith, the apotheosis of which must be sought in the religions of the East. The Nemesis

of faith is that neither in its intensity nor in its effects does man find any warrant of the worthiness of the object on which it is lavished—the followers of Joe Smith, the Mormon, are as earnest and believing as are those of Confucius!

Again, faith is the cement which binds man to man in every relation in life. Without faith in the editor of the *Journal*, I would not have accepted his invitation to write this brief note, and he had confidence that I would not write rubbish. Personally, I have battered on it these thirty-six years, ever since the McGill Medical Faculty gave me my first mount. I have had faith in the profession, the most unbounded confidence in it as one of the great factors in the progress of humanity; and one of the special satisfactions of my life has been that my brethren have in many practical ways shown faith in me, often much more than (as I know in my heart of hearts) I have deserved. I take this illustration of the practical value of the faith that worketh confidence, but there is not a human relationship which could not be used for the same purpose.

And a third aspect is one of very great importance to the question in hand—a man must have faith in himself to be of any use in the world. There may be very little on which to base it—no matter; but faith in one's powers, in one's mission, is essential to success. Confidence once won, the rest follows naturally; and with a strong faith in himself a man becomes a local centre for its radiation. St. Francis, St. Theresa, Ignatius Loyola, Florence Nightingale, the originator of every cult or sect or profession has possessed this infective faith. And in the ordinary everyday work of the doctor, confidence, assurance (in the proper sense of the word) is an asset without which it is very difficult to succeed. How often does one hear the remark, "Oh! he does not inspire confidence," or the reverse! How true it is, as wise old Burton says: "That the patient must have a sure hope in his physician. Damascen, the Arabian, requires likewise in the physician himself that he be confident he can cure him, otherwise his physic will not be effectual; and promise withal that he will certainly help him, make him believe so at least. Galeottus gives this reason because the form of health is contained in the physician's mind, and as Galen holds confidence and hope to be more good than physic, he cures most in whom most are confident"; and he quotes Paracelsus to the effect that Hippocrates was so fortunate in his cures not from any extraordinary skill, but because "the common people had a most strong conceit of his worth."

Faith is indeed one of the miracles of human nature which

science is as ready to accept as it is to study its marvellous effects. When we realize what a vast asset it has been in history, the part which it has played in the healing art seems insignificant, and yet there is no department of knowledge more favorable to an impartial study of its effects; and this brings me to my subject—the faith that heals.

Apart from the more specific methods to be dealt with, faith has always been an essential factor in the practice of medicine, as illustrated by the quotations just given from Burton. Literature is full of examples of remarkable cures through the influence of the imagination, which is only an active phase of faith. The late Daniel Hack Tuke's book, "The Influence of the Mind on the Body," is a storehouse of facts dealing with the subject. While in general use for centuries, one good result of the recent development of mental healing has been to call attention to its great value as a measure to be carefully and scientifically applied in suitable cases. My experience has been that of the unconscious rather than the deliberate faith healer. Phenomenal, even what could be called miraculous, cures are not very uncommon. Like others, I have had cases any one of which, under suitable conditions, could have been worthy of a shrine or made the germ of a pilgrimage. For more than ten years a girl lay paralysed in a New Jersey town. A devoted mother and loving sisters had worn out lives in her service. She had never been out of bed unless when lifted by one of her physicians, Dr. Longstreth and Dr. Shippen. The new surroundings of a hospital with the positive assurance that she could get well with a few simple measures sufficed, and within a fortnight she walked round the hospital square. This is a type of modern miracle that makes one appreciate how readily well-meaning people may be deceived as to the true nature of the cure effected at the shrine of a saint. Who could deny the miracle? And miracle it was, but not brought about by any supernatural means. I had the good fortune to be associated for five years with Weir Mitchell, and saw much of the workings of that master mind on the Sisters of Sir Galahad and the Brothers of Sir Percivale, who flocked to his clinics. His extraordinary success, partly due to the rest treatment, was more largely the result of a personal factor—the deep faith the people had in his power to cure. And it is in this group particularly that the strong man armed with good sense, and with faith in himself, may be a power for good. And the associations count for much. Without any special skill in these cases or special methods, our results at the Johns Hopkins Hospital were most gratifying. Faith in *St. Johns Hopkins*,

as we used to call him, an atmosphere of optimism, and cheerful nurses, worked just the same sort of cures as did Æsculapius at Epidaurus; and I really believe that had we had in hand that arch-neurasthenic of ancient history, Aelius Aristides, we could have made a more rapid cure than did Apollo and his son, who took seventeen years at the job!

Outside the profession, faith has always played a strong rôle as a popular measure of cure. There are at present four plans, all of which illustrate phases of an old-time practice.

1. In England a small sect, the Peculiar People, carry out a consistent gospel system of faith healing. A pious, simple folk, only heard of when in collision with the law of the land, they base their belief on the plain sayings of Scripture, "Whatsoever ye shall ask in My name," etc. The prayer of faith is all they need, and in consequence when one of their number dies there is an inquest, and someone is sent to prison for criminal negligence. One of the recent cases was very pathetic, as both father and mother expressed the most touching confidence that what God willed was best for their child with scarlet fever, and what they asked in prayer would be granted. This primitive Christian attitude towards disease has never lacked adherents in the Church, and mediæval literature is full of illustrations of a practice identical with that of the Peculiar People.

2. The Christian Church began with a mission to the whole man—body as well as soul—and the apostolic ministry of health has never been wholly abandoned. Through the Middle Ages the priests had care of the sick; many of the most distinguished physicians were in holy orders, and even after the Reformation in this country much of the ordinary medical practice was in the hands of the clergy. But the most characteristic development of Christian faith healing has been in connection with certain saints and shrines. The early Church found the popular belief in Æsculapius so deeply engrained that many rites of the temples were deliberately adopted, such as incubation and the practice of votive offerings. The temple sleep, in which methods of cure were suggested in dreams, was continued until recent times, and indeed has not yet been abandoned. Certain saints had special powers—St. Cosmos and St. Damian became the patrons of surgery; St. Antony and St. Vitus had well-known virtues. Belief in the healing power of relics became universal. The Reformation made a small section hostile, but a large majority of all Christians still believe strongly in the power of the saints to cure disease. The votive offerings which cover the walls of

many Catholic churches on the Continent, accompanied with grateful inscriptions, are modern counterparts of the old practice in the Æsculapian temples. Miracles are still as common as blackberries, and new saints and new shrines are in active manufacture. The process may be studied in the history of Bernadette Soubirous, the 14-year-old ecstatic, who fifty years ago had visions of the Virgin at Lourdes, now the most popular faith resort in Europe. The cures are often genuine, and the miracles are of the same kind and as well attested as are those of Epidaurus. More people, it is said, frequent Lourdes than all the hospitals of France, and the same is true in Canada of the most popular shrine of the New World—St. Anne de Beaupré. In the English-speaking world and in Germany, faith has been chilled by the Reformation, and even among Catholics this mode of healing is not much in favor. I do not know of a single popular shrine in the United States, the country of all others in which Roman Catholicism presents the most rapid development. In England there has not been an active medical saint for 300 years.

3. History repeats itself, and we are to-day deep in the throes of an intellectual change quite as striking as that which came over the Græco-Roman world when disbelief in the gods, started by the philosophers, filtered into common life. Men sought other resting-places—some with Zeno and the Stoics, others with Epicurus, while thousands remained in the misty mid-region of uncertainty. The cults which had ministered to the religious wants gradually lost their hold on the people, while the new sects appealed chiefly to the intellectuals. Christianity came, and, winning its way from below upwards, swept away many cults, absorbed others, and gradually destroyed the sects. Once again old beliefs are in the melting-pot. Modernism, the culmination of the spirit of the Renaissance, has changed the fundamental aspects of humanity, and the new wine in the old bottles has had the usual effect. A great gulf has been opened between pastor and flock, and the shepherdless sheep at large upon the mountains have been at the mercy of anyone who could pipe new tunes. One result of this intellectual and spiritual unrest is of great practical interest to us as physicians, and of still greater interest to all students of psychology. A new cult has arisen, attractive and aggressive, unlike in many ways anything hitherto seen. It was only natural (and the punishment fits the crime!) that such a cult should come from the United States, the country which possesses a larger number of separate sects than any other in the world. That the founder should be

a woman profoundly ignorant of theology and of science, without, indeed, a single bond between the professors of the one or the practice of the other, was in itself a favoring element. A disciple of an American spiritualist, Mrs. Eddy had one strong conviction—the paramount importance of the things of the spirit. Never before in a history surcharged with examples of credulity has so monstrously puerile a belief been exploited. To deny the existence of disease, to deny the reality of pain, to disregard all physical measures of relief, to sweep away in a spiritual ecstasy the accumulated wisdom of centuries in a return to Oriental mysticism—these, indeed, expressed a revolt from the materialism of the latter half of the nineteenth century at once weird, perhaps not unexpected, and, to a student of human nature, just a bit comic. One cannot but smile to think that this has happened at the very time when the Goddess of Reason was priding herself on the brilliancy of the accomplishments of her devotees! It is, indeed, a salutary lesson in humility, and serves to remind us that our deliciously credulous human nature is still plastic and receptive. To some a sign of decadence, to me the growth of Christian Science and of Mormonism is among the hopeful indications that we are in the childhood of the race. Only in the welter of a new world, untrammelled by a past and by regard for authority, among a people too much absorbed in business to work out for themselves any mental salvation, could such a chaotic mass of rubbish have had any measure of successful acceptance. And, as I said, the punishment fits the crime. For generations the people of the United States have indulged in an orgie of drugging. Between polypharmacy in the profession and quack medicines, the American body had become saturated *ad nauseam*, and here indeed was a boon even greater than homœopathy! No wonder the American spirit, unquiet in a drug-soaked body, rose with joy at a new Evangel. In every county there were dyspeptics and neurasthenics in sufficient numbers to demonstrate the efficacy of the new gospel! But the real secret of the growth of Christian Science does not lie in the refusal of physical measures of relief or the efficacy of prayer, but in offering to people a way of life, a new Epicureanism which promises to free the soul (and body) from fear, care, and unrest; and its real lever is the optimism which discounts the worries of the daily round. It has done the profession good in awakening an interest in a too-much-neglected section of rational therapeutics. The tragic side of the story lies in the valuable lives sacrificed to the fanatical ignorance of so-called healers. The miracles of Chris-

tian Science are the faith cures which we all know so well. They are exclusively in the realm of functional disorders. I have not met with any case of organic disease permanently cured. I know of reputed cures of locomotor ataxia; two of these patients still take opium for the lightning pains.

4. And, lastly, there has arisen in the United States a form of faith healing known as the "Emmanuel Church Movement," which originated in Boston with the Rev. Dr. Worcester, an able and distinguished clergyman of the Episcopal Church, who had had a good training in psychology under Fechner at Leipzig. Curiously, the idea arose out of the success which had attended the organization among the members of his church of classes for the home treatment of tuberculosis by my friend and former pupil, Dr. J. H. Pratt. It was suggested that the Church might undertake the treatment of nervous troubles by mental and spiritual agencies. As the Rev. Lyman Powell says: "The only magic known in the Emmanuel movement is the magic of a mind surcharged with faith, and operative within bounds set by the scientific doctor." Here, again, the success will depend in the individual character of the man conducting the movement. The class organization, the association with church services, and the confidence inspired by the co-operation of pastor and doctor have been favoring features. Only in existence for a few years, it is impossible to say what the future has in store, but it is an honest attempt to bring back that angelical conjunction, as Cotton Mather calls it, of physic with divinity.

Briefly stated, this is the status of the faith problem in medicine to-day. Others will analyze its workings, the relation to suggestion, to the subconscious self, etc. Not a psychologist but an ordinary clinical physician concerned in making strong the weak in mind and body, the whole subject is of intense interest to me. I feel that our attitude as a profession should not be hostile, and we must scan gently our brother man and sister woman who may be carried away in the winds of new doctrine. A group of active, earnest, capable young men are at work on the problem, which is of their generation and for them to solve. The angel of Bethesda is at the pool—it behooves us to jump in!—*British Medical Journal*.

FEVER WITHOUT PHYSICAL SIGNS.

BY THOMAS J. HORDER, M.D., F.R.C.P.

Cases of fever fall into two groups. In one, certain physical signs more or less adequate to the diagnosis are present; in the other, they are not. An intermediate group of cases exists in which there are physical signs, but they are inadequate for diagnosis—ambiguous signs, admitting of more than one interpretation. The rose spots of typhoid fever constitute an adequate sign, pathognomonic of the disease; enlargement of the spleen is an ambiguous sign, which, though indicating the possibility of typhoid fever, may be caused by many other infections. The cases of no physical signs, or of signs that are equivocal as regards diagnosis, are usually due to infective lesions of organs or tissues more or less deep-seated, which yield signs less readily than superficial organs. Such are the blood, intestines, gall-bladder, pelvis of the kidney, pancreas, endocardium and spinal meninges. The cases may be divided into two groups, according as the signs are latent or difficult to find, or are absent.

I.—PHYSICAL SIGNS OVERLOOKED OR LATENT.

(1) *Cholecystitis* is a not uncommon cause of fever, without obvious signs. The patients are usually the subjects of gall-stones, but not always. Often they are stout, making abdominal examination difficult. Pain is generally present, though it is often by no means severe; sometimes it is absent. Flatulent distension of the bowels is almost constant. Colic is not a feature. The attacks are prone to recur, sometimes after brief intervals, and the course of the disease may then suggest typhoid or Malta fever, with relapses. Repeated palpation may reveal a rounded elastic tumor in the right hypochondrium, and in this discovery the genu-pectoral position may give valuable help. This tumor may only be felt for a brief period of the disease. The urine should be tested for traces of bile, for it may be icteric before any jaundice is noticed in the skin or mucous membranes. Jaundice may be absent throughout the whole course of the disease. Even with an intermitting type of fever and rigors, the inflammation is not necessarily suppurative. And there may be no leucocytosis; indeed, the leucocyte count may be low—(4,000-6,000)—another fact which may suggest typhoid or Malta fever.

(2) *Pyelo-cystitis*.—The amount of pus in the urine may be small; and what is not seldom the sole sign of the disease may thus be overlooked. Sudden rises of temperature, often accompanied by rigors, in old men, or in patients suffering from diseases of the nervous system, leading to sphincter troubles, frequently are due to infections of the urinary tract. By far the commonest microbe at work is *B. coli*, admitting of ready isolation from the urine.

(3) *Pyorrhœa Alveolaris*.—A close inspection of the teeth and gums should never be omitted in cases of fever of obscure origin. Long-continued and marked pyrexia may be due to oral sepsis. The form of the fever is apt to be periodic, with intermissions lasting from one to several days.

(4) *Perigastritis and Subphrenic Abscess*.—In these complications of gastric ulcer, physical signs are often delayed, perhaps for a fortnight or more. When signs do appear, pleural friction is apt to be the first. The same conditions may follow gastro-enterostomy, or the suture of a perforated gastric or duodenal ulcer. A rising leucocyte count may suggest the sequence of events.

(5) The subjects of *acute rheumatism* are prone to develop bouts of fever with little or no physical signs. Sodium salicylate may have no effect upon the fever. Probably some serous membrane is in a state of smouldering inflammation. But signs of inflammation may not be forthcoming for these reasons: the presence of old valvular disease makes the diagnosis of a recurrence of acute endocarditis impossible; pericardial adhesion, oftentimes universal, prevents the appearance of the physical sign of pericarditis; and of acute myocardial disease there is no physical sign. The undoubted possibility of rheumatic pleurisy and rheumatic peritonitis must not be overlooked. These cases of rheumatic pyrexia, not seldom considerably prolonged, are always a source of anxiety, which is increased in the presence of vulvar disease. For the transition from rheumatic to malignant endocarditis, in which streptococci play so important and so fatal a part, may be very gradual and may deceive even the elect. However, a careful search for the cardinal signs of infective endocarditis, which includes bacteriological cultivation of the blood, will generally be helpful. The concurrence of chorea, or of nodules, is much in favor of the non-infective variety of the disease, though neither event excludes streptococcal endocarditis.

(6) *Localized tuberculosis* is probably the commonest cause of fever with latent physical signs, or with signs difficult to elicit.

There is sometimes a too-ready tendency to conclude that a patient is tuberculous because he is febrile over a long period. This should be resisted until several other causes that are more easily excluded have been reviewed. Nevertheless, the possibility of the disease must always be borne in mind, and it is useful to remember certain situations in which this infection is apt to lead to more or less disturbance of general health, with fever, usually mild and remittent. These situations include the lung, pleura, peritoneum, lymphatic glands, kidney and suprarenals, Fallopian tubes, and spine. Critical examination of all these organs and their functions must be made, and one or other of the tuberculin tests must be undertaken, remembering the limitations which the presence of fever imposes upon these investigations. Occasionally the febrile patient has given proof of active tuberculosis; this must be allowed great weight. The frequency of secondary pyrogenetic infections in tuberculosis must also be remembered; such a secondary infection may occasionally be demonstrated by blood culture.

(7) *Fever Following Operations*.—A physician is not infrequently asked to discover the cause of pyrexia arising soon after an operation. However confident (and justifiably so) the surgeon may be of his technique, his wound must be closely examined. A rising leucocyte count is an important indication of infection. Cultures should be taken from any fluid present, be it "blood-stained fluid," "serum," or obvious pus, and efficient drainage ensured. If a growth of any microbe is obtained from the cultures, an appropriate vaccine should be prepared and administered forthwith.

II.—PHYSICAL SIGNS ABSENT.

(1) *Influenza* is the commonest cause of a pyrexia without physical signs. Hence the doubt which always exists as to the accuracy of diagnosis; for there is nothing specific about any of the symptoms of influenza, nor about all of them taken together. They do but spell acute microbial poisoning. This doubt is naturally less during an epidemic. The fever in uncomplicated cases is usually over by the fifth or sixth day; if it lasts longer than this almost certainly some complication is present, or the disease is not influenza. If a complication exists, a focus of infection is probably present (bronchial, pulmonary, intestinal, biliary, endocardial, meningeal, etc.), and physical signs are usually forthcoming. In uncomplicated cases, leucopenia is of great service in diagnosis, especially in the absence of the typhoid agglutination reaction. Even with pulmonary complica-

tions, provided the infection remains pure, leucopenia is apt to occur. But a mixed infection, especially with the pneumococcus, is the rule in influenzal pneumonia, whether lobar or lobular, and a high leucocyte count is therefore by no means uncommon. Despite some earlier statements, it seems that in uncomplicated influenza the microbe is rarely, if ever, demonstrable in the blood.

(2) *Typhoid fever* is the most frequent and the most important cause of fever of longer duration than five days in Great Britain, physical signs being absent. As a possible cause of any case of obscure pyrexia, it must be perpetually borne in mind. Neither a sudden onset, nor absence of headache, nor the form of the temperature chart must prevent this. Diarrhoea is no longer regarded as an almost constant symptom. The manifestations of the disease are so protean that safety lies only in regarding every patient suffering from fever of undetermined cause as a suspect. In one case the first symptom was acute delirium, which continued during the first fortnight; there was no headache at any time. Both in this case and in another case of typhoid fever with marked delirium during the invasion period, there was a marked neuropathic family history. Before the immunity of any district from typhoid be accepted as evidence against the disease, it must be shown that the patient was continuously in that district during the two weeks preceding the illness; for the infection may have occurred during a sojourn elsewhere.

In the pathological investigation, sufficient importance is often not attached to the leucocyte count. The agglutination test should always receive this support, for the association of leucopenia with even an incomplete Widal reaction is a valuable indication of typhoid fever. A complete Widal reaction with leucopenia is diagnostic. If the agglutination reaction is not present, as it may not be during the first week, the diagnosis may often be established by blood-culture. Allied to typhoid fever, and often undistinguishable from it clinically, is "paratyphoid fever." These cases are even more liable than cases of true typhoid to present no physical signs. The diagnosis can be made only by isolation of the microbe from the blood-stream, urine or faeces.

(3) Certain cases of *septicæmia*, and especially septicæmia in the puerperium, may lead to marked fever without other signs. The most careful obstetrician may fail to discover aught amiss with the pelvic viscera; indeed, in fatal cases a careful

dissection of the uterus and uterine vessels after death may still reveal no macroscopic signs of disease. The diagnosis may turn almost entirely upon blood-culture.

A bone injury in a child suffering from sudden fever must always receive critical examination; and the skeleton (especially the long bones) must be carefully examined if high fever, abrupt in origin, exists in a child without ascertained cause. Unfortunately, cases of infective osteomyelitis, due to *Staphylococcus aureus*, become pyæmic so rapidly that even the early detection of the focus and its prompt treatment rarely saves the patient; but probably some cases are saved by early diagnosis, and do not run this fulminating course. If incisions are made into doubtful areas of inflammation, cultures of the exuding fluid should be made, however innocent it appears to the naked eye. Now and again a drop of serum will yield a copious growth of staphylococci in the warm incubator within six to eight hours; this should at once lead to further surgical procedure, if no fall has taken place in the temperature or in the leucocyte count, and if no alleviation has occurred in the general condition of the patient as the result of the first incision.

(4) *Malta Fever*.—Unless the attention is called to the possibility of this infection, it may be overlooked. Residence in a Malta fever district may have been of short duration, and no obvious illness may have occurred there. The patient may come under observation for general weakness, neuralgic joint pains, or the fever, some months or even years afterwards, and may give no history suggesting his infection. The diagnosis is made either from a positive blood-culture (rarely possible in such a case), or from a combination of leucopenia with agglutination of a strain of the micrococcus by the diluted serum.

(5) In *malaria* the diagnosis rests upon the discovery of the parasite in the blood; leucopenia ("relative lymphocytosis") is almost invariable. A markedly intermittent character of the fever, however, must never bias the observer unduly in favor of this diagnosis, even in the face of a clear history of ague in the past; for many pyrogenetic infections, local and general, are accompanied by this form of fever. The occurrence of rigors calls for the same caution. If the patient has never lived out of England, malaria may be excluded.

(6) *Cerebro-spinal fever* may be met with in its sporadic form. Occasionally there may be an absence of the signs for some days, or even weeks; no stiffness of the neck or retraction of the head, no change in the "reflexes" and, indeed, no signs

of meningitis. A persistent headache, with pains in the back and limbs, and progressive loss of flesh—typhoid fever being excluded by a negative Widal and the presence of a leucocytosis—should lead to a lumbar puncture and a search for the meningococcus. A young adult suffering from this disease has been treated for two or three weeks for rheumatic fever on account of the severity of his pains. An intensely sour odor of the sweat, which was profuse, increased the simulation.

(7) *General tuberculosis* is a rare cause of fever in patients who show no physical signs. According to the text-books, this is not so, and the physician has not infrequently to discriminate between it and such a disease as typhoid fever. Undoubtedly cases do arise in which general tuberculosis occurs (for some days up to two or three weeks) without evidence of focal lesions, but these are very uncommon. Blood cultivated on ordinary media will not reveal the nature of the infection, and even if special media be used the growth of the bacillus will be too slow in most instances to prove of service. If the condition be suspected from the occurrence of leucopenia and the absence of agglutination reactions for the typhoid bacillus and the *micrococcus melitensis*, films should be prepared direct from the blood and carefully stained by the carbol-fuchsin method. One or other of the tuberculin tests should be applied; the subcutaneous test is not available on account of the fever.

(8) *Intestinal Intoxication*.—Under this heading there may be provisionally included a number of cases of fever which present no signs of a specific character, and oftentimes present no signs at all. No doubt the group contains cases differing widely in pathogeny.

(a) In infants and in young children, errors in diet, both quantitative and qualitative, are commonly associated with fever. According to some authorities, one form deserves the epithet "carbohydrate fever," because it is due to an excess of starchy food. The stools are unduly pale, fermented, and offensive. But excess of starch is, of course, by no means the only error which underlies the febrile dyspepsias of childhood. The prompt and good effect of small doses of mercury and chalk, or of calomel, in many cases, suggests that excessive or unusual microbial action is a dominant feature.

(b) Intestinal parasites contribute some of the cases. The fever may be due to direct absorption of the poisonous products of metabolism of the worm, aided possibly by the mechanical irritation set up by its presence and by its movements; or it may

be due to poisoning of a secondary nature, resulting from changes in the mucosa of the bowel. Thus, intestinal parasites cause colitis, often with the production of much mucus, which acts as a good nidus, not only for the parasite itself but for bacteria, such as streptococci and colon bacilli. In all cases of obscure fever, especially in children, the stools should be examined, not only for parasites, but for ova.

(c) Acute and subacute colitis. Physical signs may be confined entirely to the stools, which may contain mucus in variable quantities, casts of the bowel, and occasionally blood.

(d) In severe constipation bouts of fever are not uncommon, and occasionally these are so marked that the presence of some local inflammatory mischief (appendicitis, stercoral ulcer, pericolic suppuration) or typhoid fever is suspected. Leucocytosis is always present, which helps to exclude the last disease, and often the count is high.

(9) *Rat-bite Fever.*

(10) *Nervous Fever.*—After a thorough examination, in which no signs have been discovered, the question of nervous influence must be considered. Cases of nervous fever fall into two groups.

(a) Some persons develop pyrexia more easily than others, just as some become delirious with less provocation than others. Those who possess an unstable thermotaxic mechanism cause much anxiety. After an acute febrile illness their temperature, instead of settling down, is apt to remain irregularly raised, sometimes for several weeks, though convalescence proceeds. They are generally very nervous people, and not infrequently there is something worse than mere neurosis in the family history. Much discretion is necessary. One stands to lose, whether the fever owns a definite organic cause or not, if he takes too little heed of the pyrexia, and this proves to have been significant of some important complication of the original illness, he may be blamed for carelessness or ignorance; if he elaborates his investigations and the condition subsides without serious developments he may be blamed for unnecessary activity.

(b) *Neuromimesis.*—The patient is usually a young woman of a temperament recognizable by the experienced clinician, but difficult to describe. Her morbid nervous state shows itself not only by pyrexia without organic cause, but also by the simulation of other pathological processes—anorexia, vomiting, eruptions and contractures. Cured of one of these, another takes its place. Her disease belongs to that strange land which holds malingering-

ing at one pole and hysteria at the other; her symptoms betoken less naughtiness than deserves the slur of the former epithet, and less system than to merit their being classed as the latter. In younger patients precocity and "being spoilt" and in older ones a hopeless love affair are common factors. The temperature curve may reveal suggestive features. The morning rise may be greater than the evening rise, and with the pyrexia there may be no associated increase in the frequency of the pulse and respiration. The patient, however, is not always of the type described. Prolonged and obscure pyrexia occurred in a young married woman who had watched month after month the treatment of her phthisical husband in a sanatorium near by. The routine of sanatorium life, with its temperature takings, weighings, and dietings, brought about a state of nervous imitation of phthisis. She simulated her husband's disease closely, for to the pyrexia she added considerable loss of flesh and a troublesome barking cough, with hoarseness and aphonia. She was rapidly cured by six months' stay with convivial friends. So thin was she that physical examination of the chest was extremely easy; yet nothing could be found in the lungs, larynx, or elsewhere.—*St. Bartholomew's Hospital Journal.*

Progress of Medical Science.

MEDICINE.

IN CHARGE OF W. H. B. AIKINS, F. A. CLARKSON
AND BREFNEY O'REILLY.

Treatment of Tuberculous Hemoptysis

The best position for a patient bleeding from a tuberculous focus in the lungs is the semi-recumbent one. The patient should be quieted as much as possible, and speaking is to be forbidden, unless the pulse demands it, nothing is to be given by mouth for several hours; later, small amounts of luke-warm drinks are in place. A mild cathartic, given early, will remove blood and infectious material from the gastro-intestinal tract and relieve the congestion of the lungs. The bladder and skin demand the same attention as they do in other seriously ill individuals. The most important drugs are narcotics and a dose of morphine and atropine is indicated unless there is anæmia of the brain or fear of aspiration. The atropine is not only an antidote for morphine, but also possesses hemostatic properties of its own. Morphine with scopolamine (0.0005 Gm.) may be tried.

In long-continued hæmorrhages, codeine, heroin, or dionin may be given. Amyl nitrate, 4 to 7 drops inhaled, will often check severe hæmorrhages without interfering with the cough. Gelatin may be used by mouth, rectum, or under the skin. Other drugs said to have hemostatic properties are calcium chloride, salt, and sterile horse-serum. Lead, iron, ergotin, styp-ticin, and styptol, the author claims, are virtually useless in pulmonary hæmorrhage, and adrenalin should be carefully avoided.

Among physical measures is the application of an ice-bag and the use of ice-pills internally. Hot water-bags and hot rectal injections draw the blood away from the lungs. The extremities may be tied off so that the venous return flow only is interfered with, and the affected side of the chest can be immobilized with adhesive plaster strips.

Attempts have been made to resect the first rib and compress the lung directly, but better results have been obtained from the artificial pneumothorax (inflation of the pleural sac with

nitrogen, to compress the lung). This applies, however, only to early cases of tuberculosis, where there are no adhesions. In severe cases, venesection, infusion, or heart stimulants may be required.—*Muench med. Woch.*

Treatment of Ringworm

The several antiseptics advocated for outward application in cases of ringworm are far from satisfactory, the prolonged duration of the disease proving their inefficiency. In dealing with the numerous cases of pediculosis in fever wards, E. Lynn Jenkins reports that he and his associates always employ the essential oil of sassafras, which, without exception, they find acts as a specific in such cases.

When both pediculosis and ringworm occurred in the same scalp, it was noticed that the latter disease also reacted favorably to this preparation.

This led them to test the possible usefulness of the oil for ordinary cases of ringworm, and so far the results have been most happy. The hair is cut closely around in order to identify the patches, the application of the oil being made twice a day by means of a camel-hair brush. This is continued for a few weeks, as the case indicates. No irritation is produced, while the preparation is most pleasant to use. Not only is the spread of the infection prevented, but that the fungus is being destroyed with certainty is recognized in two or three weeks, by commencing development of fine hairs.—*British Med. Jour.*

Gastric Pain

Leven (*La Clinique*) points out that pain in the region of the stomach may be of two kinds, solar and visceral, and he emphasizes the necessity of distinguishing between them, in the interests of diagnosis, prognosis and treatment. Solar pain is due to hyperæsthesia of the solar plexus, and is characterized by attacks varying in intensity and frequency, but always situated in the middle line between the xiphoid cartilage and the umbilicus. If the pain is dependent on pressure, the skin should be raised and pinched so as to distinguish between cutaneous hyperæsthesia and true solar pain. When this pain exists by itself, simple dyspepsia may safely be diagnosed, unaccom-

panied by any visceral lesion, such as ulcer, cancer, syphilis, or gastric tuberculosis. If a gastric lesion should co-exist, a special pain is present besides the solar pain, situated at a definite fixed point, shown, by radioscopic investigation, to be the seat of the local lesion. This is the visceral pain, situated always in some part of the stomach itself, and always more or less to the left of the middle line of the body. In one case cited by Leven the patient complained of serious gastric troubles, and X-ray examination showed a bilocular condition of the stomach, which, taken in connection with the cachectic condition and the gravity of the symptoms, seemed to point to an organic cancerous lesion. Suitable medication relieved the patient and cured the solar pain, but emaciation continued, and a fixed visceral pain persisted in the contracted portion indicated by the radioscope. Before resorting to operation a course of mercury and iodide was tried, with the result that the pain diminished after the second injection, and finally disappeared, the patient being definitely cured, putting on flesh and digesting her food thoroughly; proving that the case was one of a syphilitic lesion of the stomach, complicated by dyspepsia.—*British Med. Jour.*

Prof. L. Landouzy enlarges on the importance of the general practitioner "being able to make a diagnosis of even rare diseases, such as sporotrichosis, which is perfectly curable under proper treatment, but may go on indefinitely if no measures are taken to destroy the parasite, and may lead to useless and disfiguring operations. Such patients may be treated for syphilis and a bad prognosis made for final recovery, and the history may lead to the belief in congenital syphilis in the offspring of the patient. The author cites a case of sporotrichosis which had become generalized, there being many gummatous and ulcerative lesions occupying many different locations in the skin. The general health of the patient was good, and she was able to go about her daily work. There was no enlargement of the glands. The spores were cultivated on glycerinated gelatin with success, and characteristic colonies developed. The patient was treated with potassium iodide internally, and the local lesions washed with iodine solution. Cure was complete in eight weeks. This treatment is specific for the disease." Of course, Landouzy is right. It is, however, simply an axiom that the better educated the physician the better it is for the patient that he may be called upon to treat.—*The Post-Graduate.*

The Detection of Blood in the Stools. By DR. M. TRIBOULET
(*Société de Pédiatrie.*)

The author finds the reaction to phenolphthalein superior to that with guaiacum and benzidine, the risk of error being less, and also because it facilitates the discovery of traces of blood of digestive origin and clinically unsuspected, as in cases of (1) old-standing purpura, Barlow's disease; (2) violent intestinal reactions with ecchymoses, acetone-mic disorders in young children, entero-colitis in older children simulating appendicitis; (3) various intestinal complications in pneumonia, measles, scarlatina, and diphtheria. Intestinal discharges, like those met with in certain cases of uremia, connected with congestion of the digestive mucous membrane and bloody exudation mixed with the stools, are detected in most cases only by the red reaction with phenolphthalein.—*The Post-Graduate.*

Infectivity of Desquamation in Scarlatina. A. RENAUD.
(*Revue Médicale de la Suisse Romande.*)

In 20 cultural examinations made of the desquamating scales from cases of scarlatina, at periods varying from the 8th to the 50th day after the onset, a streptococcus was only twice found to be present.

In one of the two positive cases a good deal of scratching had occurred, and it is probable that the skin became infected from the patient's nails soiled with nasal discharge. Simultaneous examinations of the pharyngeal secretions showed streptococci to be invariably present even after desquamation had ended. If as is generally admitted a streptococcus is the cause of the disease, these results indicate that the skin plays a very subordinate part, if any, in conveying the contagion, while at the end of the ordinary isolation period the throat may be still capable of giving rise to infection.—*The Medical Chronicle.*

Spirochaeta Pallida. —The following method is suggested by J. E. R. McDonagh for use in the staining of the spirochaeta pallida: Drive a fine glass pipette through the skin at the border of the chancre and along underneath it; keep tube vertical until the serum has separated; break off the portion containing the clot and allow the serum to fall on a glass slide; around the drop of serum place six or seven platinum loopfuls of distilled water and the same quantity of India-ink (Günther and Wagner);

mix thoroughly, smear out in a thin layer on the slide, allow to dry, and examine with oil-immersion lens. The organisms show white against the dark background; a few blood cells will also be visible, their diameter being roughly one-half that of the spirochæta. (Proceedings of Royal Society of Medicine, April, 1910.)

Pericardial Effusion. —Samuel West, in the Medical Section of the Royal Society of Medicine, in an address on the above subject, drew attention to a number of points, of which the following are the more important. As regards the physical signs of serous effusions, he believes that the earliest are those of general cardiac dilatation, due to myocarditis, and are found in an increase in dulness outwards and upwards along the third left space, or rib, in other words, is the disappearance of Sibson's Notch, which phenomena he believes to be due to a dilatation of the left auricle. Another early sign is the obliteration of Rotch's cardio-hepatic angle, probably due to dilatation of the right auricle. He finds that in large effusions bulging of the epigastric region, in which pulsation may be felt (Auenbrugger's sign), may be present, but he has also observed systolic epigastric recession. As regards friction rubs, West has heard basal friction over large collections of fluid, even in the recumbent posture, he believes the *pulsus paradoxus* to be rarely met with, unless mediastinal adhesions be present; also that when distress is marked, that it is due, not to the mechanical effect of the fluid, but rather to a concomitant myocarditis. West sees no objection to paracentesis, but considers it rarely necessary. For purulent effusions, however, he relies on incision.

Cambridge's Reaction in Cases of Ulcer of the Duodenum.—

George Herschell, in the *Medical Press* of April 20th, 1910, suggests the application of Cambridge's pancreatic reaction in cases showing symptoms suggestive of duodenal ulceration as a means of differentiating the disease from simple functional disturbances. He believes that hyperacidity alone cannot produce pain, but that hyperæsthesia of the gastric or duodenal mucosa is the essential factor. Now, in cases showing hyperæsthesia, Moynihan and others believe that the great majority of these cases show evidences of some definite cause, such as gall-stones

or duodenal ulceration. Any clinical sign, therefore, that would show definite duodenal irritation must be of value, especially in the differentiation of functional hyperchlorhydria from duodenal ulcer, and since duodenal catarrh frequently extends by the pancreatic duct and produces a chronic pancreatic inflammatory action, Herschell believes the presence of a positive Cammidge reaction to be of the greatest value in the diagnosis of duodenal ulcer, and gives notes on some twenty-five cases as proof of his supposition.

Oxaluria — Maguire in several papers published in the *Lancet* and Proceedings of the Royal Society of Medicine has maintained that calcium oxalate calculi may be dissolved in the urinary passages by means of acid, phosphate of sodium administered per os. He recommends that the pure salts be given in solution in divided doses, in quantities of from one to two ounces per diem, preferably on an empty stomach. He also recommends the same treatment for simple oxaluria, and in proof of his contention refers to certain clinical cases in which satisfactory results were obtained.

LARYNGOLOGY AND RHINOLOGY.

IN CHARGE OF J. PRICE-BROWN.

Transplantation of Cartilage in the Correction of Deformities of the Nose. CROSBY D. GREENE. *Boston Med. and Surg. Journal*, March, 1910.

The author gives a *resumé* of literature as to the transplantation of cartilage and perichondrium. He reports two cases of destruction of the quadrangular cartilage resulting from septal abscess. In both cases he used cartilage removed in submucous resection from other patients.

Total Atresia of the Naso-Pharynx Following Removal of Adenoids. WOLFF FRUDENTHAL. *Laryngoscope*, May, 1910.

A young woman suffering from nasal insufficiency due to the presence of large adenoids had them removed by her physician. This was followed at once by commencing atresia. The case being referred to Frudenthal, he advised operation. This was declined. In a short time the closure became complete, and in May, 1909, she consented to operation. An incision was made through the adhesion, and a strip of gauze was passed through the nose into the mouth and the ends attached over the lips. This was left for three days, when sloughing commenced, and fearing extensive destruction of tissue the gauze was removed. Subsequent treatment consisted of dilatation twice a day with the probe or finger. When reported six months later the pharynx was perfectly free and the patient's voice normal.

In discussing this case, Dr. Harris drew attention to one reported in the French journals, in which the adenoids were removed so vigorously that total atresia followed as a result of the operation.

Pemphigus of the Throat. Report of a Case. L. M. HURD. *Jour. of Laryngology*, March, 1910.

The remarkable thing about this case was that the disease was entirely limited to mucous membranes. The patient was a woman, aged 33. On examination, bullæ, vesicles and superficial ulcers were seen on the velum, posterior pharyngeal wall and base of the tongue. Four years later a similar condition occurred on the conjunctiva of the left eye, destroying the vision on that side. At no time was there any eruption on the skin.

Removal of Tumors of the Pituitary Body by an Intra-Nasal Route. A. B. KANAVEL. *Jour. of the Amer. Med. Assoc.* November, 1909.

Kanavel advocates the operation of elevating the nose, cutting the cartilaginous septum, removing the middle turbinates, deflecting the septum, locating the sphenoidal foramina, biting off the attachment of the perpendicular plate of the ethmoid and vomer, entering the sphenoid sinus, and thus reaching the floor of the sella turcica, to remove pituitary tumors.

A Case of Excision of the Entire Tongue with its Results. H. A. DAVIS. *Journal of Laryngology*, June, 1910.

The case was that of a man aged 45, suffering from a cancerous growth at the base of the tongue. The movements of the tongue were never impaired. It was nowhere adherent, and no glands were detected. But the growth extended completely across the tongue from side to side. Several microscopical examinations were made of sections. The latter ones proved the case to be malignant, and in August, 1909, the jaw was divided in mid-line and the entire tongue removed. There was no recurrence; but nine months later the following conditions presented themselves: The patient was well but thin. He spoke volubly, but was not easy to follow, every "f" being pronounced as "th." He could not bite properly. In eating he did not know where the food was located in his mouth. In swallowing, although the epiglottis was visible, standing vertically upright three-quarters of an inch, food never entered the larynx. The anterior surface of the epiglottis was very insensitive when compared to the posterior surface. In front of this organ the large buccal cavity without any appearance of tongue was very noticeable.

Epithelioma of Larynx in a Man Aged Sixty-nine. Successful Operation. No Return in Fourteen Months. CHICHELE NOURSE. *Jour. of Lar.*, June, 1910.

Previous to operation patient had been troubled with hoarseness and partial loss of voice for five months. Larynx inflamed. Sausage-shaped, red growth occupied the anterior two-thirds of left vocal cord. Thyrotomy was then performed, and the left vocal cord, the left ventricular band and the left arytenoid removed. The thyroid cartilage was found to be completely ossified and could not be sutured after the operation. The parts were brought together by suturing the perichondrium. Recovery

was rapid and permanent. Microscopical examinations of a specimen before operation, and also of the tumor after, proved that the case was one of epithelioma.

Multiple Papillomata of the Larynx. HARMAN SMITH. *Laryngoscope*, May, 1910.

A boy aged five, suffering from hoarseness, had adenoids and tonsils removed. A few days later, under an anesthetic, tracheotomy was done; and later many papillomata were removed through a Jackson tube. Still, as fast as they were taken away they would reappear. Wherever the mucous membrane was injured the papillomata would spring up; so that, notwithstanding frequent operations, at the end of a year the larynx was still filled with papillomata. Operations were then discontinued, and various local and internal measures resorted to. This treatment proved to be equally unavailing. Then, as the tracheotomy tube was still *in situ*, it was decided at last to leave the larynx alone for a while, giving it complete rest. As a result, after leaving the tube in the trachea in all for eighteen months, the growths had disappeared and the child was well again.

Larynx, Four Rings of Trachea, and Part of Thyroid Gland and Gullet Removed during act of Suicide. T. A. PETERS. *Journal of Laryngology*, April, 1910.

The specimen was shown to the Laryngological Section of the Royal Society. A painter, aged 29, in a fit of hallucination caused by alcoholism, cut his throat when sober at 5 in the morning. He made a transverse cut down to the spine and two or three vertical cuts, one of which opened the larynx in the middle line. The suicide then seized the larynx and cut away the adherent gullet and trachea at the fifth ring. He then threw the fragment away and walked 200 yards to a friend's house. The doctors summoned found no bleeding vessels; but it was impossible to bring the trachea to the skin. The man died five hours later of suffocation.

Case of Death on the Operating Table. J. C. BECK. *Laryngoscope*, May, 1910.

Man, aged 35, admitted into hospital in a drowsy condition. Owing to the presence of a running ear, stationary pupils, slight rise of temperature, vomiting, and absence of other general symptoms, meningitis was diagnosed and a mastoid operation

decided on. The patient was prepared, ether was administered, and in twelve minutes the man was dead.

Autopsy: The brain was normal. Temporal bone showed a necrosing ethmoiditis. Chest and abdomen negative. Right kidney cystic. Left kidney small, with shortened ureter. It was concluded that the patient might have had uræmia on admission, although examination of the urine had been negative as regards albumen, and that the small quantity of ether administered aggravated the process, and, increasing the coma, caused death.

OPHTHALMOLOGY AND OTOTOLOGY

IN CHARGE OF J. T. DUNCAN.

Examination of School Children's Eyes

Before the Chicago Ophthalmological Society, Dr. A. E. Bulson read an excellent paper on the above subject. In part he says:

The importance of systematic examination of the eyes of school children is now appreciated by medical men and many educators, and in a number of States the Boards of Health and Education have endorsed and recommended the general adoption of the tests proposed. In Vermont, Massachusetts, Connecticut and Colorado the tests are made in compliance with laws requiring their use. In many localities teachers are testing the vision of school children of their own volition, without suggestion or recommendation of their superiors. But there is still much work to be done before eye tests are generally adopted in our schools.

In those schools where the tests have received practical application the revelations are astonishing in showing to what an extent the so-called mental defectives and incorrigibles are due to remediable eye defects. In Philadelphia, for instance, it was found that 60 per cent. of the school children had eye strain or defective vision, and in many of these instances children were thought to be backward or mentally deficient, whereas the correction of the defects by properly adjusted glasses was followed by remarkable improvement in the work and conduct of these pupils. The Director of the Department of Public Health, in making his report concerning this work, says that the tests have demonstrated that many so-called mental defectives and incorrigibles do not really belong to that category, and he emphasizes the fact that the expense incurred in making the tests and supplying glasses to those too poor to pay for them has been more than counterbalanced by the increased worth of an educated citizen over an illiterate one who may become a public charge, or whose earning capacity is so curtailed that he can contribute but a small amount to the support of the State. He further believes that in many cases such children would have joined the criminal class or in some way would have become a burden on the community.

The subject should be discussed in all its details before

numerous organizations, and particularly the various women's clubs and teachers' associations.

The task of educating the public logically falls to the specialist, who, by training and experience, is best fitted to present the subject in a comprehensive manner, and if one or more specialists in every community will take an active interest in the work it will not be long before the eye tests of school children will be a part of the curriculum of every school in the country.

Dr. Bulson favored the Allport plan, which provides that the tests be made by school teachers, or, if not by the teachers, by regularly appointed members of the Board of Health. If oculists make the tests it is sometimes looked upon as an interference with private affairs, or it is charged that the oculist is working in his own interest (sometimes true), and the charge is reiterated by envious fellow-oculists who have not been selected to make the examinations. If the examinations are made by teachers, there is seldom any serious objection, and for practical purposes the teachers in our schools can be readily taught to recognize the pronounced eye defects, and the latent errors of refraction will be noticed by the observing teacher if she notes the manifestations common to such conditions. Few teachers will be found who are not willing to go to the trouble of making the examinations when they once understand what can be accomplished in making their school work easier by raising the mental and physical standard of a large percentage of defectives, who are a source of annoyance and extra work because of their defects. Every parent whose child has been benefited by the eye tests immediately becomes an ardent champion of the plan to make eye tests a regular feature in the schools. When public sentiment sanctions the plan, and the more progressive schools have put the plan into operation and demonstrated its value, then and then only will it be possible to secure general legislative enforcement of eye tests in our public schools.

Inspection of Eyes in School

In the course of a series of articles to a lay paper, Dr. J. Grimshaw urges that examination of children's eyesight must be done by specialists. Some extracts may be given:

Systematic examination of children's eyesight is revealing the existence of optical errors in vast numbers of children. These errors cause either defective vision or eye-strain. To prevent physical deterioration and educational waste, it is necessary, by means of spectacles, to relieve the one and cure the

other. The practice of the medical inspector, on the discovery of such a case in the school, is to notify the parent or guardian of the child that it is suffering from defective vision. Then printed advice is given, and the legend on the sheet (Liverpool) runs thus:

"You are, therefore, recommended to consult your doctor with regard to the treatment of the child's eyes. If he considers spectacles to be necessary, you are particularly cautioned against buying them without his prescription. The sight of many children has been ruined by neglecting this precaution."

This piece of satire is worthy of Dean Swift. It is scarcely necessary for me to say that such advice is printed for distribution as a sop to the susceptibilities of the general practitioner. For medical men in general practice are seldom able to prescribe spectacles. As a result of our present system of qualifying and post-graduate medical education, the practitioner gets no training in refraction as part of his medical curriculum. Even if the accomplishment is acquired later, very few men in general practice have the chance of preserving their skill in refraction or eye diseases.

It is necessary in the children's interest that they should be properly examined by a competent specialist. It follows, therefore, that this work must be undertaken by those who have special experience and skill, and the only part the average general practitioner can play is to act as a sort of distributing agent of the children who consult him to have their eyes "tested for spectacles."

In the Annual Report of the Chief Medical Officer for England, in the section devoted to ear disease and hearing, the following occurs:

As regards defective hearing, the approximate average is given as 5 per cent. of school children; the actual returns vary between 12.9 per cent. for Worcester and 1.0 per cent. for Leicester. The Report insists upon the examination of all children backward in speech, inattentive, dull, or backward at lessons, and of those whose parents give a history of deafness in the child. We are glad to read, in connection with testing, that "the ability of the child to hear the ticking of the watch at varying distances from the ear, though a very convenient method, is frequently fallacious, especially in the case of younger children. The test by means of the forced whisper is probably the most suitable one to adopt generally."

The foregoing remarks will show the enormous importance of school medical inspection to otologists and laryngologists, and the great promise it gives as to the prophylaxis of ear and nose diseases in future generations. It is sincerely to be hoped that this promise will be fulfilled, that medical inspection will grow and prosper, and that future governments will be manly enough, and far-sighted enough, to withstand the comment of ignorant parents, whose votes they wish to retain, and will not, for party reasons, sacrifice it and with it the future good of the nation. In a word, it is devoutly to be trusted that compulsory medical inspection may never meet the fate of compulsory vaccination.

Editorials.

THE CANADIAN GOVERNMENT ANNUITIES SCHEME

Our city dailies recently contained a report of a most interesting address which was delivered by the Superintendent of the Department of Annuities at a banquet held under the auspices of the Employers' Association of Toronto. The subject should be of vital interest to the medical profession, and it seems fitting, therefore, that reference to the scheme might properly be made in these columns, for the physician, of all men, is the one with whom the fact of mortality is ever present. Called and commissioned to wage war on the powers that lie in wait to overthrow human life, he is constantly being reminded of the risks men run from exposure to hostile elements or still more hostile germs, of what "pricks and cracks

Befall the flesh through too much stress and strain,
Whereby the wily vapor fain would slip
Back and rejoin its source before its term."

He sees the shadow on the dial ever advancing, and the clouds that come to blot out the dial's usefulness before the sun is set. It is on that account that we write, for the information of members of our profession, of the other side of things, to give them some account of this scheme that is based on the fact of the relative permanence of human life; a scheme that provides not so much for the calamity that may fall in the days of one's youth as for the disability that comes when the "almond tree shall flourish and the grasshopper shall become a burden."

* * * * *

Life insurance is concerned with the probability of dying, but the function that figures in the annuity business, especially in that section devoted to deferred annuities, is the probability of old age. The relative importance of these functions may be obtained by a study of any mortality table. If we selected one hundred healthy doctors at age 30, we should find that seventy-five of them would be alive a quarter of a century later; that

66 would survive 30 years, 56 would survive 35 years, and not till 38 years had passed would their number be cut down to 50. If the selection of the hundred men were made at age 40, we would find 81 of them alive at age 55, 72 of them alive at age 60, 61 of them alive at age 65, and nearly one-half of them surviving until age 70. It is regarded as almost necessary for a man to guard against the risk of his dying before 70; in fact, the protection of life insurance is rather intended for the years before 65; but a consideration of the figures here given will show that the chance for the man in the prime of life dying before his usefulness is impaired is not quite so great as of his reaching the years when it will be expedient or necessary to retire from active work. The inevitable question is then: How shall we provide for this contingency? We are carrying insurance against death; is there not need for insurance against old age?

* * * * *

A physician's capital is locked within his brain. It is well for him to insure that wealth against the stroke of fate that may leave his family without its income. But if death for him is analogous to a fire or flood that on a sudden destroys his property and leaves him penniless, old age is no less analogous to the culmination of the wear-and-tear processes that lead to superannuation. The day of "new men, strange faces, other minds" will come, when we must yield our tools, be they scythes, or swords, or scalpels, to the younger hands. We feel then that we "can't come back," and it is for this period of life that the Government Annuities Scheme is intended.

It is a generous scheme, but not a charity provision. The rate of interest involved in the calculation of the benefits is a fair one, viz., 4 per cent., and no charge is made on the purchasers of annuities for any of the expenses of administration. The security is, of course, ample, being the wealth and resources of the state. The forms of contract under which annuities may be purchased are, we gather, varied enough to suit any need, and beyond this Parliament has granted the administrative power to make special contracts so long as these do not conflict with sound actuarial principles. A description of some of the plans may be in place here.

Plan "A" would naturally appear to be the more common form of contract sold. This provides for an annuity to begin at age 55, or some later age, the payments for which are made in the period between the date of application and the date when the annuity becomes due, with the condition that, should the purchaser die during this period of deferment, all his premiums will be returned to his heirs, with 3 per cent. compound interest. These premiums may be paid periodically, in yearly, half-yearly, down to weekly instalments, or may be paid in a lump sum at the date of application, or under a combination of these methods. In short, the annuity he will receive at any specified age depends simply on how much a man pays and when he pays it; the earlier the payment is made, the greater, of course, the benefit derived for the actual sum paid when the contract matures. Under Plan "B," there is no return of premiums in case of death, but the survivor who takes the chances receives the same annuity for much smaller payments.

These two plans work as follows for a man now aged 30 or 40:

—Annuity of \$100 at Age—

Male aged 30.	55	60	65
Annual premium, Plan "A"....	\$ 27.33	\$ 17.40	\$ 10.91
Annual premium, Plan "B"....	22.75	13.35	7.47
Single payment, Plan "A".....	427.96	296.38	195.26
Single payment, Plan "B".....	333.03	211.75	125.00
Male aged 40.			
Annual premium, Plan "A"....	\$ 57.56	\$ 33.42	\$ 19.92
Annual premium, Plan "B"....	50.62	27.14	14.41
Single payment, Plan "A".....	649.29	454.90	304.72
Single payment, Plan "B".....	536.88	341.36	201.51

The Government has also afforded facilities for those who wish to buy "dead sure" things in forming a contract by which the annuity is partly withdrawn from the operation of the laws of mortality, so that the annuity payments are guaranteed for specified terms of years should the annuity age be reached; and there are also several forms of contract under which a man and his wife may enjoy together, or during the lifetime of the survivor of them, an income in old age.

The Annuities Branch of the Government does not profess

to be a life-saving institution, but it is safe to say that in planning to provide against the disabilities of old age it is doing work that will not only help the physician himself, but that will help him, through the elimination of some of the worries which eat out life, to build up a race of men with sound minds in sound bodies.

THE RESULTS OF THE EXAMINATION—COLLEGE OF PHYSICIANS AND SURGEONS OF ONTARIO

The general impression has been gaining ground that there has been much "cramming" by the students before coming up for examination, and this has been accentuated in the memorandum sent to the President of the College prior to the last meeting of the Council, by the examiners for the Intermediate Examination of May, 1910, who reported on the standards adopted by them, and on the standing of the candidates who presented themselves for this examination.

Their standards were based mainly upon three points: First, the safety of the candidate; that is, that he should neither poison his patient, nor by neglect or malpractice endanger life; and while they felt that such candidates would be unsafe and should be rejected, yet, in consideration of the coming fifth year, and the lack of emphasis definitely placed upon this in the past, they decided that those answers which showed such gross ignorance or carelessness should have nothing allowed in the way of marks; but if during the oral examination the candidate was purposely careless or reckless, he should be marked down to 50 per cent. or less, according to his general knowledge. Second, thoroughness and the breadth of the candidate's knowledge. The candidate to have sufficient knowledge of the common diseases, affections and emergencies that he could intelligently carry out treatment. Third, that the candidate should have sufficient knowledge of practice to carry out in a practical way accepted treatment, and show a sense of proportion in selecting the order in which the different measures should be employed.

They fully realized that no hard-and-fast standard should be put up for "pass," and that a certain amount of variation in the standards of individual examiners must necessarily exist, but the candidates were "sized up" at almost the same value by all the examiners at the oral examination, and such exceptions as existed could usually be explained by the candidates having either neglected or laid stress upon a certain subject or group of subjects.

The view is also expressed that no candidate securing less than 40 per cent. on his paper should be allowed to present himself for oral examination.

The report further states that the candidates presenting themselves for examination were of good standard in bearing and physique. But a number, by reason of mental incapacity or of defective preliminary training, should never have been allowed to enter the course of studies for medicine, or should have been weeded out in the first years. If the teaching bodies could put in force a means by which these few unfit would be discouraged early in their course, they would in reality be benefiting such students. Many of the candidates are unable to spell the ordinary words or to use freely the English language. The most noticeable defect of the candidates was the inability of the student to apply his knowledge—apparently assimilation had not taken place. One is reminded of the sentence, "As if sheep, after they have been feeding, should present their shepherds with the very grass itself which they had cropped and swallowed, to show how much they had eaten, instead of converting it into wool and milk." * * * * *

The following are the results of the examinations in Primary, Intermediate and Final, at London, Kingston and Toronto:

LONDON.

	Tried.	Passed.	Failed.
Primary	15	9	6
Intermediate	17	9	8
Final	13	6	7
	—	—	—
	45	24	21

KINGSTON.

	Tried.	Passed.	Failed.
Primary	33	26	7
Intermediate	28	15	13
Final	22	13	9
	—	—	—
	83	54	29

TORONTO.

	Tried.	Passed.	Failed.
Primary	65	22	43
Intermediate	151	75	76
Final	95	76	19
	—	—	—
	311	173	138

The above list of figures does not convey the fullest information possible, as many of the details, such as the number of candidates presenting themselves for re-examination, and the number of candidates coming from other than Ontario colleges, are not included; but surely this high percentage of failure, nearly 50 per cent. of the Intermediate candidates, is a startling comment on the want of proficiency of the candidates or the lack of efficiency of their teachers.

The examiners' report stated that some of the candidates who presented themselves for examination had not the necessary mental capacity for the work, but we understand they were few in number. Is the standard, as stated in the report of the examiners, too high? Surely not; and we hope the examiners may live up to the moderate standard of the last examination, for it is not one demanding knowledge of the uncommon, but merely that the candidate should show that he is safe to be allowed to start the practice of medicine, having in view the fifth year for clinical study prior to his obtaining the license.

Are the students defective in their practical work? The examiners report in the affirmative, and the institution of the fifth year by the Council supports this view, and conversation with the teachers convinces us that it is so.

Is the grave failure because there is not sufficient clinical material, or is it that the students are not taught the practical nor trained to practice?

Is it that the student is not encouraged to use the material at hand, or is it that his teaching is defective because his time is taken up, not with observations and practical training, but with "talks" from his teachers, of little interest except from an academic standpoint?

Are the professors—sometimes styled teachers—competent, or are some of them "inebriated with the exuberance of their own verbosity and egotistical imaginations"?

The student pays a good price for a practical and thorough medical education, and the Government should see that he gets it.

THE MEETING OF THE ONTARIO MEDICAL COUNCIL

The last session of the Medical Council, 1906-1910, assembled in Toronto, Tuesday, July 5th, and continued in session until Saturday, July 9th.

During this time good work was accomplished. The Committee on By-Laws had held several meetings and consolidated the by-laws into fourteen, which was considered sufficient for the purposes of the Council, eliminating many by-laws that were ineffective and obsolete. As a result, the proceedings of the Council were very considerably simplified.

On account of severe criticism concerning some of the methods adopted by the Council, a special committee on finance was appointed, which thoroughly investigated financial matters and reported many changes, defining the hours members were expected to travel and draw pay, and defining the pay by half days. These same arrangements are to govern examiners and members of committees.

It has never been considered by the profession at large that members of the Council were overpaid for their services, notwithstanding certain members of the College have seen fit to seriously criticise that remuneration. The examiners have never been well enough paid for the amount of sacrifice they make in conducting these examinations. The time the examinations take, the close application required during the hours of examination,

and the tedious toil of reading several hundred papers, demands better remuneration, and it was felt by many that the honorarium to be given for the coming year was not sufficient.

After some years of effort, a chartered accountant has been appointed auditor. This is in no way a reflection on the gentleman who for a number of years officiated as auditor for the Council, but it is in accord with the most advanced business methods, and it was the desire of the Council that the best business methods should prevail.

An innovation this year was the report submitted by the intermediate examiners: an exhaustive report, which contained valuable suggestions for the conducting of future examinations. A suggestion was offered that the primary examination be held by the teaching bodies under censorship. This was a very serious question, yet a majority of the Council was in favor of a change in this respect, but it was thought that, as the elections were coming on this year, it would be an opportune time to secure the views of the electors in this matter.

The Dominion Registration Bill, or what has been known as the Roddick Bill, was submitted to the Council in its changed form, and the approval of the Council to the proposed changes in the Canada Medical Act was granted. In its present form, it is, no doubt, more acceptable to the different provinces than in any of its previous modifications, but it is still far from an ideal Act. Considerable discussion took place on the clauses referring to examinations, and the great difficulty and expense necessary to conduct these examinations in so numerous and diverse portions of the Dominion. The cost would be enormous, the time taken up would be great, and, altogether, this feature of the Act appeared to many at least to be impracticable. The subject of reciprocity with Great Britain was left in abeyance for the time being particularly owing to the clause in the Roddick Act, which provides for Dominion reciprocity with Great Britain.

The Committee on complaints and registration had a large number to consider, and wherever possible the petitions were allowed.

The Education Committee had a serious amount of work

before it owing to a misunderstanding on the subject of chemistry, which was taken from the primary examinations, and passed into the preliminaries; also with two of the subjects that had been amalgamated by a change in the curriculum last year, but this difficulty was removed.

A deputation from the Medical Faculty of the University of Toronto waited on the Council to suggest the holding of the examination at a much later date. The suggestion was accepted and the examination will be held about two weeks later. This will necessitate holding the next meeting of the Council in July. The change is made for the benefit of the student, and the results of the next examination may show its value.

The Council adjourned after a vote of thanks to the retiring President for his hard work during the year.

NOTES.

The honorary degree of D.Sc. has been conferred on Professor W. Osler, M.D., F.R.S., by the University of Leeds.

The Manitoba Sanatorium for Consumptives was formally opened near Ninette on June 22, 1910. The institution as it now stands cost \$65,000, and will, when fully equipped, accommodate 80 patients.

According to newspaper despatches, the Radium Institute of London finds it hard to obtain the $5\frac{1}{2}$ grammes of radium needed to equip the Institute properly for its therapeutic work. The firm which undertook to supply that amount is unable to live up to the contract.

The first woman who ever became a fully qualified medical practitioner was Dr. Elizabeth Blackwell, who died recently in England, although she was an American by birth. She studied medicine at the University of Geneva, New York. She went to London in 1849, and although finding much opposition, entered St. Bartholomew's Hospital as a student. In Paris she contracted ophthalmia from a patient, with the result that she lost an eye. Then her hopes were blasted of making surgery a specialty. In 1851 she returned to America and established a dispensary, which afterwards grew into the New York Infirmary for Women.

PRESS COMMENTS ON THE REPORT OF THE CARNEGIE FOUNDATION

Any movement directed toward the securing of better-trained physicians will usually meet with public approval. Hence it is not surprising that almost universally the newspapers have made favorable comment on the report on medical education recently issued by the Carnegie Foundation for the Advancement of Teaching.* Some of the few adverse comments still show concern for the "poor boy who wants to study medicine" and for the "sparsely settled country districts," which, according to the argument, would be without physicians if fair educational standards were maintained. That even the country districts have no reason to be alarmed regarding physicians is shown by the Knoxville (Tenn.) *Sentinel*:

"The more compact settlement of the country, the spread of good roads, the telephone and the automobile will in time make it possible for the distant farmer to summon from the city doctors learned in all the lore of the German, the Austrian, the French and of the American universities. When that time comes, doctors will have to seek the best schools or risk having no patients. Even now unnecessary multiplication of medical schools should be avoided and many of those in existence might be merged with advantage to all concerned, except the doctors who get valued advertising from their position as teachers."

As to the "poor boy" argument, the Omaha *Bee* says:

"It is not narrowing the lines of opportunity to the poor but ambitious young man and woman to reduce the number of medical schools by raising the standard of efficiency. There are always ample opportunities for those who make good in medicine as elsewhere, and for the physician who has the making of success the best medical school preparation is none too good."

That the profession is at present overcrowded and that higher standards of medical education and licensure are needed are recognized in the following from the El Paso (Texas) *News*:

"It is extremely deplorable that so many doctors and lawyers are every year turned loose on the public, many of whom are utterly unfit to render the service demanded of them. The efficiency and capableness of both doctors and lawyers depend on the standard of the schools from which they graduate. And the

This report should be read by every physician. While it is a book of 346 pages, it may be obtained by merely sending 17 cents for postage to the Carnegie Foundation, 576 Fifth Avenue, New York City.

standard of the schools, law or medical, depends in many instances on the regulations prescribed by the state laws. Where the state does not require a very high standard of efficiency and is willing to grant licenses on a mediocre basis, schools of inferior rank are bound to spring into existence, and it is from such schools as these that hundreds of badly and improperly trained doctors and lawyers are annually turned out."

Regarding the statement that higher standards will tend to reduce the number of physicians to fewer but better prepared men, the *New York Times* says:

"On the face of it, a plan to restrict the physician's career may seem a wrong one to those seeking to enter it, may savor of the denial of the individual freedom to which we Americans are devoted—and addicted. But there will remain complete liberty for the more competent, and that the competent only shall be allowed to practice is one of the plain, universal, unalienable rights of the whole community."

The *New York Globe* draws a pointed comparison between the St. Louis college which brought suit for damages against the Foundation for publishing its shortcomings and the action taken by an Iowa college which did not raise a cry of "slander," but began an energetic campaign, whereby sufficient funds were obtained to put it on the right basis. Regarding the continuance of low standards, it also adds:

"If the doors of the state university, rich in educational opportunities, qualified to turn out real doctors, lawyers, engineers, and the like, are open to all, why should the manufacture of feebly qualified professional men or other be tolerated at all?"

Although there may be statements of detail which might be criticized in the Foundation's report, generally speaking the statements made are recognized as the truth by those who are in position to judge. While the truth sometimes hurts, nevertheless, any presentation of the actual facts cannot result otherwise than in good to the cause of medical education. The need of improvement has long been recognized by the majority of medical colleges, and these schools, rather than decry the Foundation's criticisms, will earnestly endeavor to correct their faults and thereby obtain real benefit from the Foundation's investigation.—*Jour. A. M. A.*

The *Medical Record* comments on the report as follows:

"The most recent publication, entitled 'Bulletin Number Four,' of the Carnegie Foundation for the Advancement of

Teaching, treating of medical education in the United States, makes what Horace Greeley used to call 'mighty interestin' readin'.' Whether it is also entertaining depends largely upon the direction of the reader's sympathies and college associations. Very naturally, those who are connected directly or indirectly with the schools so fiercely and contemptuously flayed by Mr. Flexner, the writer of the report, resent his attack bitterly; while those connected with the institutions receiving his faint praise—there is but one perfect school in the eyes of this investigator—whatever they think, say little.

"The report professes to be based on a thorough and most painstaking personal investigation of every medical school in this country and Canada, made by Mr. Abraham Flexner, a professional critic of educators, or student of systems of education. In order to correct a very current misconception, we may say, in parenthesis, that this is not Dr. Simon Flexner of the Rockefeller Institute, but his brother. The doctor has troubles of his own with the antis of various ilks, and should not lose professional support through being made to answer for the sins of his brother. Neither, may we add, should the brother be judged by the essay which the president of the Foundation contributes by way of introduction to the report.

"As a result of this investigation Mr. Flexner concludes that the country is suffering from a great plethora of medical schools—a fact which medical men have well known and deplored these many years; that many of the medical schools have not a sufficiently high standard either of admission or of graduation—another fact long well known; and that the facilities for teaching, in the way of apparatus, subjects for dissection, etc., are lacking in a number of schools—likewise a matter of common knowledge. What the writer of the report does not seem to have discovered is that all these schools, with the exception of a very small and practically negligible number, are in process of betterment, and that several associations of medical men and medical educators are working constantly to encourage and force the poorer schools to raise their standards and improve their teaching methods. When one realizes what the best of the medical schools were twenty-five or thirty years ago, and what tremendous progress has been made during the past twenty, and especially the past ten years, and when one remembers that all this uplift has come from within, without the help of any outside 'Foundation,' the work of Mr. Flexner seems somewhat a waste of effort and a needless expenditure of Mr. Carnegie's hard-

earned money. All reforms, worthy of the name and lasting, come from within, and the interference of outsiders serves only to bewilder and irritate. The facts gathered and tabulated in this Bulletin of the Carnegie Foundation will perhaps be useful for reference by the real reformers, and had nothing yet been attempted or accomplished in the way of raising standards, the comments and admonitions of these self-appointed critics might have been useful as a goad. As it is, they will be very properly resented as uncalled for. The writers of the Bulletin are unfair in that they ignore what has already been accomplished and are silent as to the agencies at work in raising the standard of medical education. Whether this omission of a fact which, if properly presented, would prove the work of the Foundation to have been one of supererogation, was intentional or whether it is only evidence of a superficial and one-sided investigation, we do not know."

It is not our intention at present to discuss the Carnegie Report. To be appreciated, it should be read from cover to cover. The information it contains is astounding, in some instances amusing, and is a sad commentary upon American medical education as it was in the year 1909.

It is not an exaggeration to say that the publication of this Report will result in numerous medical college funerals, in an improvement of many institutions which were thought to be high-grade, and in an aroused public sentiment which will remove the cloak of secrecy from our medical schools.—*St. Louis Medical Review*.

CHANGES IN THE PERSONNEL OF THE MEDICAL FACULTY AT THE UNIVERSITY OF PENNSYLVANIA

The Trustees of the University of Pennsylvania have announced recently certain changes in the personnel of the teaching staff, to go into effect at the beginning of the next academic session, September 1st, 1910.

To fill the Chair of Theory and Practice of Medicine, made vacant by the resignation of Dr. James Tyson, Dr. David L. Edsall has been transferred from the Chair of Pharmacology and Therapeutics, and the vacancy in the latter will be filled by the

appointment of Dr. A. N. Richards, now Professor of Pharmacology in the Medical School of the Northwestern University.

One hundred thousand dollars has been received for the endowment of a Chair of Physiological Chemistry, and Dr. Alonzo Englebert Taylor of the University of California will be its first occupant.

Dr. Richard M. Pearce of the University and Bellevue Hospital Medical College of New York has been appointed Professor of Pathology. Dr. Pearce will also direct the work of the Department of Research Medicine recently established by an endowment of \$200,000.

Dr. Allen J. Smith, the present Dean of the Medical School, will be the occupant of the new Chair of Comparative Pathology and be at the head of the newly instituted courses in Tropical Medicine.

Dr. Paul Lewis, who will have charge of the laboratory of the Phipps Institute for the Study, Prevention and Treatment of Tuberculosis, now an integral part of the University, has been elected Assistant Professor of Pathology.

Obituary.

MIHRAN K. KASSABIAN

Dr. Mihran K. Kassabian, an eminent specialist in X-ray work, died in the Jefferson Hospital, on July 12th, of burns received from the mysterious rays during years of continuous research.

Dr. Kassabian, who had experimented with the X-ray for many years, received his first injury in 1902, when the finger nails on his hands were burned. He placed himself in the care of physicians, who noticed that the burns produced an effect on the skin similar to that of cancer. Two years ago his hands were so badly affected that it was found necessary to amputate two fingers, Dr. W. W. Keen performing the operation in the Jefferson Hospital. The operation, however, did not check the progress of the cancer-like affliction, and a year ago it was found to be extending up his left arm, causing an enlargement of the glands under the arm-pit. This became so serious that it was found necessary to remove the glands, Dr. J. Chambers DaCosta operating.

The second operation proved as futile as the first, and it was considered urgent to subject the patient to a third operation, consisting of the removal of certain muscles on the left side of his chest. This was accomplished about four months ago, and, serious though it was, Dr. Kassabian appeared to some extent to rally from it. Indeed, he continued his work with almost the same vigor as if he had been in the best of health.

Dr. Kassabian, who was an Armenian, was born in Caesarea, Asia Minor, forty-two years ago, and in 1894 came to the United States to study medicine. He entered the Medico-Chirurgical College in 1898, and in the same year, while the Spanish-American war was in progress, served in the Hospital Corps of the army.

The doctor was a member of the Philadelphia County Medical Society, the Roentgen Society, and the Medical Club of Philadelphia. About eighteen months ago he went to Constantinople to marry Miss Virginia Giragosian, of that city. Besides his widow, he leaves three brothers, jewellers, in Smyrna.

Book Reviews

Insanity in Every-Day Practice. By E. G. YOUNGER, M.D. Brux, M.R.C.P. Lond., D.P.H., etc. Senior Physician, Finsbury Dispensary; late Senior Assistant Medical Officer, London County Asylum, Hanwell; formerly Assistant Medical Superintendent Metropolitan District Asylum, Caterham; Fellow of the Medical Society of London; Member of the Medico-Psychological Association of Great Britain. Second edition, revised and enlarged. Published by Ballière, Tindall & Cox, 8 Henrietta Street, Covent Garden, London, 1910. (All rights reserved.)

The above volume, which contains only about 115 pages, covers exactly the subject matter referred to in the title. The work is one eminently useful to the young practitioner; he will find in it precisely the information he requires when confronted with a case of insanity, and many useful hints as to the manner in which he must approach the patient. Appended are reproductions of the various certificates required by the Lunacy Commission of Great Britain.

The author has not seen fit to discuss the subject of the psychoneuroses, or mention it in any way, nor has he made reference to hysterical states. We think that, although the book is only intended to cover insanity, it would have been advantageous to have some light thrown on these diseases.

Modern Medicine; Its Theory and Practice, in Original Contributions by American and Foreign Authors. Edited by WILLIAM OSLER, M.D., Regius Professor of Medicine in Oxford University, England; Honorary Professor of Medicine in the Johns Hopkins University, Baltimore; formerly Professor of Clinical Medicine in the University of Pennsylvania, Philadelphia; and of the Institutes of Medicine in McGill University, Montreal, Canada; assisted by THOMAS MCCRAE, M.D., Associate Professor of Medicine and Clinical Therapeutics in the Johns Hopkins University, Baltimore; Fellow of the Royal College of Physicians, London. Vol. VII. Diseases of the Nervous System. Illustrated. Published by Lea & Fabiger: Philadelphia and New York. 1910.

We have much pleasure in reviewing the above volume, which

in every way is well up to the standard of its predecessors. The introduction to the Diseases of the Nervous System has been undertaken by Llewellys F. Barker, of Baltimore, who discusses the senses and their symptomatology, disturbances of sensation, the various complex psychic processes, etc. Joseph Collins, of New York, deals with topical diagnosis, while the various system diseases, tumors, functional disturbances, etc., are taken up in a complete and systematic manner by such men as Gordon Holmes, Harvey Cushing, and a number of other equally prominent neurologists. The illustrations and plates leave nothing to be desired, the photographs from life being particularly good.

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No. 9

Original Communications

THE ROLE OF RADIUM IN SURGERY IN THE TREAT- MENT OF CANCER (GRAVE)

BY DR. LOUIS WICKHAM.

Médecin de Saint-Lazare : ancien chef de Clinique de la Faculté : Directeur des recherches en Pathologie externe au Laboratoire Biologique du Radium, et le Dr. Deg als, Chef de Laboratoire à l'Hôpital Saint Louis.

The studies which we have made during the last five years on cancerous tissues which have been subjected to the influence of radium have shown clearly, as was easy to foresee, that if the action of radium, well-handled, was often favorable, it could lay claim to local results only; further, in statistics regarding cancer of a more serious nature, for the treatment of which radium was used, we must not rest satisfied merely with watching the tumor diminish, but must consider more particularly the future of the patient, which is quite a different matter; for even in cases where tumors have entirely disappeared without any local return, we have seen very frequently, as a result, metastases produced which can neither be operated upon nor treated. Nevertheless, even thus limited in its rôle, radium offers to patients resources clearly appreciable and useful in varying degrees.

Now, the aim of this article is to establish the theory that these resources are real only on condition that radium therapy be aided and controlled by surgery.

This association is to be established as a principle. Not only will this result in guiding the movement of present-day radium therapy towards a wise practice, calculated to safeguard the patient from inopportune applications which deprive him of the benefit which might accrue from other methods of procedure, but it will also secure the best results from the use of radium.

This brings us to the consideration of the two following aspects of radium therapy. First, the power of penetration of the rays. Second, the ease with which it may be handled.

The power of penetration of certain rays is, as is known, very great; theoretically, there can be no obstruction. In fact, the depth to which a ray acts depends not only on the absolute power of its penetration, but at the same time: (a) on the number of rays which attack a given point (whence the importance of the quantitative value of radio-activity on which we have often insisted); (b) on the greater or less facility with which this or that tissue allows itself to be influenced.

If, then, we think, as MM. Delbet, Hennenschmidt and M. Tuffier have shown, that, given certain apparatus, this penetrative action is limited, and relatively weak (about 3 centimetres), we have determined on the other hand that this limit might be extended by the use of a greater number of rays and by suitable technique, notably against certain forms of neoplasm. Here is an example:

In the case of one of our patients, in the course of treatment we reduced at each new application and held in check for seven months a lympho-sarcoma of the mediastinum in the following manner. We set up action by crossing the rays, the apparatus being applied simultaneously in front and at the back of the thorax, with filters light in proportion to the intensity of radio-activity, and we multiplied the points of application by displacing the apparatus before the duration of the applications could change the cutaneous covering. The original cervical neoplasm, which had reappeared very markedly immediately after a first operation, had been treated by radium (cross-fire) a year before; under that influence it had disappeared entirely and had not since returned.

It is in order to obtain an action at the greatest possible depth that we advocate, in certain cases, especially when it is a question of getting into the vital part of a tumor, the use of filters or screens of less and less density and thickness, or even dispensing with them altogether, and consequently making use of the greatest number of rays possible.* that is to say, compatible with the sufficient integrity of the tissues which are for a given time in direct contact with the apparatus. That is, moreover, the method of procedure of Robert Abbé, when, by

*Quite recently the use of 19 centigrammes of pure radium (quite a large quantity), applied on a single point of an enormous tumor of the breast for forty-eight hours, produced in one of our patients on the sixteenth day an appreciable reduction, which we never observed to the same extent in as short a time with weaker doses. The tumor, cut out by Dr. Arron on the 16th day of application, showed evident histological changes along the course of the rays (at a depth of 15 centimetres).

introducing tubes, he makes use in general only of combined filters of glass, aluminum and celluloid of thickness inferior, on the whole, to lead filters from 1-10 to 3-10 millimetres, the frequent use of which we recommend, and which themselves do not permit the use of very penetrating ray-action, such as is described by M. Dominici.

It is also the care in concentrating a greater number of rays acting at a depth, and the search for that quantitative value of ray-action which has led us to oppose apparatus, to increase the number of points of attack in order to end at the crossing of the rays—at the “cross-fire,” according to our own expression—and in this way to saturate the tumor with rays in a homogeneous way, with less risk of exciting cellular disturbances later on. But if radium therapy, through the progress of its technique and the increase of radio-active power possible of use, depends on the increase of the limits of its action as to depth, it lies with surgery to make the best use of this progress. Thanks to surgery, one can lessen the thickness of the tissues which the rays have to cross laterally by making in the tumor, in order to introduce the apparatus, perforations deep, simple, double, or even multiplied for the application of the cross-fire; by making large incisions, or by partially removing the tumor, and the results obtained will be satisfactory in proportion to the perfection with which these methods have been used.

On the other hand, if the neoplasm to be reached is difficult of access, since the apparatus is small and can take any shape desired, surgery can, after having made way for it either by making artificial openings in creating passages or by making use of natural openings, bring it, even at great depth, into actual contact with the neoplasm. And here again the results will depend on the accuracy of the application, combined with the most skilled operating. Here is an example of it:

A fellow-doctor was sent to us early in October, 1909, suffering from a malignant neoplasm at the neck of the bladder, which showed all the usual train of morbid characteristics. M. Pasteau confirmed the diagnosis and proceeded to apply the apparatus. After sounding the infected region by urethroscope, with the aid of a catheter the radium was placed in good position. Now, without the skill and perfect execution of Dr. Pasteau these proceedings would have been harmful. On the contrary, the past seven months have brought about an amelioration in proportion to the series of applications, and at present our fellow-physician is enjoying apparent good health, and micturates only a little more frequently than in a normal con-

dition. Similar action is necessary in cancer of the throat and rectum.

In the case of one of our patients a cancer of the rectum (high up), because of its projections, formed an obstacle to the passing of a sound. Now, it was important that the radium apparatus should be placed in the open part of the neoplastic canal, and it was only when this was done successfully that the hemorrhage and secretions dried up. At the end of eleven months (since treatment was begun) the patient is still reaping benefit and has resumed active work.

We have treated cancer of the intestines by introducing the apparatus through an artificial anus.

It is in this way, also, that MM. Gauthier and Labey, with our radium collaborations, have conceived and carried out the idea of treating cancer of the pylorus through an opening left in the anterior wall of the stomach after gastro-enterostomy, and through the application of the apparatus on the abdominal wall.

Similarly, again, for cancer of the larynx, we made use of an opening by tracheotomy in order to act on the passage throughout and secure applications of the longest possible duration. There is much that could be said in regard to the use of radium in cancers in other regions, notably in cancer of the uterus, in which perhaps radium has rendered us the greatest services; but our aim is to establish a principle and give some ideas in regard to technique, and not to enter into detail in connection with the results obtained. Let us add, however, that in some of these cases, whether through the stopping of hemorrhages and secretions, or by lessening the suffering, or by reducing protuberances and even tumors, radium has rendered highly important service to patients by giving comfort and prolonging life. In some cases, moreover, life has been prolonged and the patient in fairly good condition for more than two years.

Here are cases which show some of the services which radium can render surgery. Epithelial cancer of the parotid region. It was a case of an enormous epithelial tumor, which projected for 5 centimetres. It measured 11 centimetres across and 9 centimetres through, and covered the whole cheek and parotid region and was firmly fixed at its base. Treatment by radium dated from September, 1908; leveling of the tumor was obtained in five months after several series of treatments, consisting in the introduction of the tube and in the application of the apparatus (cross-fire) on the surface of the tumor. For

nine months the tumor remained leveled to the surface; then there was a return (accompanied by a slight degree of facial paralysis), which was neglected for four months in spite of our warnings, and which we are treating at the present time. When nothing remained but small masses which had become moveable, we should have profited by this factor to have them uprooted, leaving the region to be treated by radium afterwards.

It should be noticed that, in the course of diminishing, one of the most interesting signs to be observed was the return to movability of the base in proportion to therapeutic action. We stated from the standpoint of histology, for example for the cheloides, that the modifications of the base are among the first signs of diminution.

Here is the case of a patient who was sent to us from Bristol, September 28, 1909, suffering from a neoplasm of an epithelial nature of the left sub-maxillary region—a case considered as inoperable. It was a case of a return after a ganglionic excision and destruction of the small original neoplasm, which was lying on the labio-gingivale mucous membrane. The English surgeon declared that the trouble had gone too deep to permit of a wholly advantageous operation. Such was also the opinion of M. Banzet. We then adopted the following method in the hope of diminishing the thickness to be treated: the greatest possible surgical excision of the tumor, then intense radium therapy action, internal and external, with a total of about 15 centigrams of pure radium, distributed by means of several sets of apparatus acting at the same time. M. Banzet ascertained when he had completed his surgical work that the bottom of the wound was largely covered with neoplastic tissue.

After several series of suitable treatments, followed by periods of rest, we obtained in the fourth month a healing-over of favorable appearance. This condition has remained for four months. We continue carefully to treat the region energetically. We will not allow ourselves certainly to predict an ultimate relief. The tissues are firm; we shall hope that it may be a matter to a great extent of fibrous change.

There was produced two months ago a metastasis under the chin, which was cut out and subjected to treatment by radium. Histology indicated that it was a matter of baso-cellular epithelial proliferation.

We mention two other cases which seem to us of sufficient interest to call to the attention of the reader. The one is a recurrence of a neoplasm of the breast. MM. Lenonnan and Gaston handed this case over to us ten months ago, thinking that

a surgical operation would be performed under bad conditions for this tumor, which projected for three centimetres, and was five centimetres at the base, rested on cicatrical tissues, and was also adherent to the sternum. The surface showed no ulceration and was very much inflamed. At present the tumor has entirely disappeared. The surface where the neoplasm rested has contracted; that surface no longer has the five centimetres of extent, which we so carefully measured at the beginning of the treatment, for there has been produced, as usually happens, a certain contraction of the tissues which have undergone treatment. There was a return three months ago, which was immediately treated and reduced. At the upper end of the sternum two metastases, quite recent, have been determined.

The other is a well-known case of the Anatomical Society, well known at least in so far as its anatomical aspects are concerned. It was apparently a case of fibromata transformed into fibro-myxomata of the anterior region of the shoulder. He was a patient of M. Peraire, who operated on him several times very extensively. After each operation the tumors returned, and in larger numbers. Finally, the extent of the neoplastic tissues giving rise to uneasiness, M. Peraire asked us to take charge of the patient. In six weeks a great reduction was obtained, and there has been no return for ten months; but we will continue a series of applications from time to time. Here again the tissues have been reduced, and suggest to one an original lesion of much less extent than was really the case in the beginning. (Since sending out the manuscript for this article we have determined a metastasis in the anterior fold of the axilla. The histological diagnosis of the case has remained undecided; it will form a subject of special study.)

In a case of "epulis" or osteo-sarcoma of the lower jaw, we obtained a cure which has lasted for six months. It was a case of return after insufficient excision, because it was desired to preserve the teeth. The latter were loose, but after treatment by radium they became firm, and the tumor diminished satisfactorily. But in this case we acted without the aid of surgery, and the result was a very long course of treatment. It would have been better, it seems, to have taken away as much as possible of the tumor, and on the growing part to make a passage for applications in "cross-fire," external and internal. By means of this combination we would have gained much time. Although in such cases cured by the aid of surgery alone, the disfigurement would be slight, consisting in the loss of two teeth, and of a small bony portion, certainly there would be an advantage in

avoiding it by associating and combining the two processes named.

In conclusion, the result of our observations—about six hundred in number—is that it would be useful if radium should be considered as an auxiliary to surgery in the same way as are X-rays and fulguration. Acquainted with the expedients which radium therapy offers (whether it be a matter of injection of salts of radium or of application of radium apparatus), surgery can conceive of new operating technique adapted to these resources, and can thus reach parts which used to appear outside the region of therapeutics. It can seek to lessen the malignity of the operating field, whether before or after the operation. It can complete insufficient operations, and in some cases perhaps adopt with advantage conservative measures.

In the case of one of our patients, for example, it was possible to avoid amputation of the leg for an osteo-sarcoma of the tibia, for when the radium apparatus was surgically introduced, to great depth and with accuracy to the necessary parts, the neoplasm disappeared satisfactorily.

It is most certainly from the combination of surgery and radium, of the methods of radium-therapy surgery, as we term them, that, without exaggeration or scepticism, we may make best use of the new resources introduced by radium in the treatment of a certain number of cancerous neoplasms.—(Extract from *La Clinique*.)

W. H. B. AIKINS.

ON THE CAUSATION AND EARLY DIAGNOSIS OF UTERINE CANCER*

BY DR. A. C. HENDRICK, M.A.

Demonstrator in Gynecology, University of Toronto, Assistant Surgeon, Department of Gynecology, Toronto General Hospital, Member of Associate Staff, Grace Hospital, Toronto.

Although this paper is intended to deal primarily with the early diagnosis of uterine cancer, still it is very important to survey briefly the prevalent ideas in regard to the causation of cancer in general, since, if one has some idea of the probable causation, one may be led the more reasonably to an early diagnosis of the condition.

First of all, we must realize that cancer is universal, all races of mankind and all vertebrates being liable to it.

Bashford states that the vegetarian castes of India are no more exempt than are those living on a mixed diet, though it has been stated that the Jews of East London become more liable to it after some years of living in England. Hence, the mode of living would seem to have little to do with the causation of the disease.

Again, the disease seems to have a predilection for certain regions of the body in different species, mammary cancer being common in the mouse, but rare in cattle.

Experimentally, there can be produced:

1. Local Infiltration.
2. Systemic dissemination.
3. Terminal cachexia.

The transference is a true transplantation of living cells, infection taking no part. Hence, Ribbert's view of cancer is that it is a continuance of growth of cells which primarily were confined to a circumscribed area.

Age incidence.—This has been shown to be the same for short-lived animals as for man.

Now, explanations of cancer must agree with:

1. That, statistically, cancer is a function of age.
2. That, biologically, cancer is a function of senescence, and, one may add, of immaturity.

The law of age incidence applies alike to individuals of a species and individual organs and tissues. For example, (2) cancer of the breast before puberty is practically unknown.

*Read at the meeting of the Canadian Medical Association, Toronto, June, 1910.

Senescence, constitutional or circumscribed, is an endogenous predisposing factor. It is closely associated with its origin, but it is not necessary to its continuance; that is, the origin and the growth of cancer are separate phenomena.

Cancer is more prevalent in domesticated animals because, on account of good care, etc., they reach the cancer age.

Exogenous causes:

1. Chronic irritations have nothing in common except causing prolonged attempts at repair. Hence, tissues subjected to such conditions are really primarily old, so to speak, or perhaps immature in some cases, and so are liable to cancer if they have reached the cancer age. Many examples of this are known; for example, radiant cancer, or actinic cancer of the lip, from smoking a short pipe or from X-rays.

Again, distinct innate relations seem to exist between cancer of the same organ in different species and the connective tissues. For example, in the human breast it is scirrhus; in a dog breast, cartilage; in the mouse, angioma.

It is important to bear in mind that cancer may:

1. Arise locally in a circumscribed area.
2. Any part of the normal covering of the body may acquire cancerous properties.
3. And that more than one focus of origin in a circumscribed area may exist, or have origin of different ages; that is, extension by apposition.

Hence, one may assume an acquired local or constitutional predisposition; that is, an indirect etiological significance to chronic irritation, causing anapylaxis.

Again, as to the morphology of cancer. It is to be borne in mind that there is an immense variety of carcinoma cells, all descended from normal cells, some of which pass into one another, whilst others do not, and are able to maintain their characteristics for a considerable period. Hence, apparently benign growths become malignant; for example, adenoma. Also, by transplanting cells from individual to individual, and so maintaining them in the continuous or intermittent state of regeneration, it seems possible to perpetuate varieties of cells more capable of growth; hence, the origin of sarcoma.

Again, there are normal types of cells which are the proto-types of malignant cells; for example:

1. Bladder epithelium and carcinoma.
2. Decidual cells and sarcoma.

3. The mucous membrane of the outer end of the Fallopian tube and malignant adenoma. Also, columnar epithelium may become squamous; for example, psoriasis of the endometrium, or squamous cells become columnar, due, perhaps, to metaplasia.

Growth of Cancer.—Growth of cancer cells is different from embryonic cells.

1. The cancer cell shows cyclic changes in the degree of differentiation of its histological characters.

2. It disobeys all the laws of growth of embryonic tissue. That is, it has the habit of growth minus the habit of function.

3. When transplanted, the blood vessels and supporting connective tissue scaffolding are supplied anew by a reaction elicited by the chemiotactic influences of the parenchymatous cells.

4. Cancer cells are specialized regrowth, and not undifferentiated cells.

5. The cancer cell has no analogy with any known form of infective disease.

Continued growth takes place after inoculation of living cells into animals of the same species.

The metabolism of the cancer is a property of itself, that is, a *vita propria*, the propagated tumor having much the same relation of the fetus to the mother. That is:

1. There would seem to be no toxic properties injurious to the host.

2. No disturbance in the cell metabolism.

Cyclical changes in cancer cells are shown by:

1. Rapid or slow growth.

2. Transitory cessation of growth.

3. Greater or less spontaneous immunization.

4. Variation in histological structure; for example, alveolar to acinous, and vice versa.

But we must remember the dosage and the soil are important factors.

Heredity:

Darwinism hardly applies here; that is, acquired cancer, etc., except, perhaps, in cases of metaplasia.

Weismann's theory that germ plasm is continuous from generation to generation, and that these germ cells have a potentiality of variation dependent upon environment. That is, oscillation in the nutrition of somatic cells may influence or cause variation in germ matter. Therefore, there is heredity in disease, or, as Garrod, in his Croonian Lectures, in 1908, states it:

"Inborn errors in metabolism"; and since metabolism depends upon cellular enzymes, so, in cancer, perhaps there is some innate error of metabolism, forming or altering the cellular enzymes, so causing increased tendency to cell proliferation, the actual growth activity being due to some accidental irritation.

It cannot be doubted but the processes of the body are largely influenced by heredity; for example, the endogenous toxins, diabetes, baldness, or the abiotrophy of Gowers.

The Mendelian Law would seem to be applicable to such a disease as cancer, which has not yet been shown to be due to infection, as is, for example, tuberculosis.

By the Mendelian Law one means the law of segregation, the germ cells being a single structure and the animal a double structure, having received a series of elements from its father and a series also from its mother.

The Mendelian Observation.—When dissimilars meet in one individual, there is, on formation of the germ cells, a separation between the two characters which come in; that is, the dominant and the recessive. The animal is a combination of many natures; for example, height, color, form, and so on, separately transmitted. For example, in eye color, the presence of the pigment is dominant. Color blindness and other deformities follow the law, so special resistance or special liability might follow the law; for example, resistance due to presence of something, as in color blindness, and liability to the absence, or recessive qualities, as, for example, in alkaptonuria.

So with sex-limited diseases, as hemophilia.

Hence, as to the causation, one may sum up:

1. No limitations as to species.
2. Diet and mode of living has little influence in causation.
3. Cancer is statistically a function of age of the individual.
4. Cancer is, biologically, a function of either immaturity or senescence, either constitutional or acquired; for example, immaturity, when, owing to limitations of function, the growth habit alone is differentiated, the cell becoming purely vegetative, due perhaps also to some error of its metabolism. Then its faulty metabolism causes enzymes, which may cause adjacent cells to take on this vegetative habit, etc., due to chemiotactic influence; so one sees the different reactions of the surrounding tissues or stroma developed.

Or again, in repeated attempts at repair, the cells specialize the growth habit, and so become more strongly vegetative and unspecialized as to function. For example, metaplasia and

anaplasia takes place, and so one finds abnormal new growths; for example, squamous cell epithelium arising from columnar cells, as in the uterus, gall bladder, etc.

Again, the normal inter-cellular antagonism of the body seems not to hold for the anaplastic cells, that is, the vegetative or rapidly proliferating cells; hence, metastatic growths are possible; for example, the mother cells of the thyroid to bone, causing adenoma.

5. The origin and the growth are separate.
6. Exogenous causes; that is, chronic irritations are important predisposing agents.
7. Cancer may arise locally anywhere.
8. There may be more than one focus of origin in a circumscribed area.
9. The histology of cancer cells varies within wide limits.
10. Cancer cells are specialized cells.
11. Heredity certainly plays a part in the predisposition to cancer.

THE EARLY DIAGNOSIS OF UTERINE CANCER.

The early diagnosis of cancer of the uterus is one of the most important functions of the family physician, for it is to him the patient usually appeals for relief; hence, it is his bounden duty, by every means available, to make the diagnosis if possible. There are three sites for uterine cancer.

1. The vaginal portion, from the vaginal vault to the external os.
2. The cervical portion, from the external to the internal os.
3. The uterine body, from the internal os to the tubal orifices.

Now, cancer of the uterus develops in its mucous membrane, or immediately under the mucous membrane of its elements; that is, the glands of the cervix or the body. This classification is important, because, not only the clinical picture of the cancer, but the methods of diagnosis, are quite different, depending on the starting point and extension of the disease.

There are certain symptoms which one may designate by the name of prodromes of uterine cancer. These are:

1. Bleeding in coitus—due either to engorgement or friction. It is very common, and often the first symptom noted in cancer of the cervix, though it may occur in vascular erosion, endometritis or polyps. It is always a suspicious sign.
2. Metrorrhagia—after the menopause; that is, some months after the menopause. This symptom may occur in fibroids and polypoid disease, but it is most often due to cancer. Irregular

hemorrhages before the menopause are not so suspicious, but we must bear in mind the age incidence.

3. A sero-sanguinous discharge resembling greasy dish-water or beef brine, occurs in the very early stages of cancer of the cervix, and is rare in other conditions. This modified cervical discharge is characteristic.

Clinical Diagnosis:

The clinical diagnosis of uterine cancers depends upon two factors:

1. The presence of a neoplasm, either proliferation or infiltration.
2. Its degeneration. This leads to the characteristic friability of tissue, which is of great diagnostic value. This friability is recognized by the finger or the sound. This property of breaking up into small pieces under pressure of the finger is very characteristic, and the only other tissues, perhaps, showing it is a necrosing fibroid.

The great tendency to bleed is understood when one recalls the histological structure. Hence, bleeding is characteristic of all three varieties of uterine cancer. But one finds hemorrhages in erosions, endometritis, chronic metritis and polyps, although less, so that diagnosis cannot be based on bleeding alone. When both features of cancer are present, namely, neoplasm and degeneration, the diagnosis is easy, but if only one of these is present, difficulty arises. For example, there may be only proliferation; then inspection with speculum aids, while any infiltration is found on palpation, whilst degeneration is found by both methods.

Cancer of the vaginal portion may be seen and felt through the speculum in the Sims posture, whilst palpation of body cancer may require dilatation.

Vaginal portion:

Cancer here is the most easily diagnosed of all sites.

1. If of the polypoid variety, its surface is reddish in color and friable, that is, easily broken or crumbled down by finger or sound.
2. If of the flat kind, any bulging above the surface is suspicious.
3. If of the infiltrating kind, a nodule is felt, cartilaginous in consistence, and altering the shape of the vaginal portion. If, however, the mucous membrane over the lump is intact, then there is trouble, though the surface of the nodule may be purple in color and spotted by yellow pits due to the cancer nests.

4. Ulcerating cancers are easily spotted. The jagged fissures, with soapy secretion, or reddish in color, with moderate induration, are quite characteristic, but often the microscope has to decide.

DIFFERENTIAL DIAGNOSIS.

The polypoid variety from:

1. Papillary tuberculosis may be made by careful inspection, finding the millet seed nodules of tubercle in the neighborhood; for example, the tubes, peritoneum, or a focus in other organs.

2. From mucous polyps. Inspection shows the surface mucous membrane intact, and the sound, that they originate in the cervix.

3. Cervical fibroid, with the pedicle, is distinguished by its intact mucous membrane and non-friability, unless gangrenous.

4. Follicular hypertrophy of the vaginal surface. Here the surface is not rough, the tumor is not friable, and it is covered by intact mucous membrane, through which the follicles may be seen.

5. Condylomata acuminata. Here there is only a papillary surface, with thick epithelium, no ulceration or infiltration. The color is a whitish red. Further condylomata may be found also in the vagina or vulva.

INFILTRATING VARIETY.

The differential diagnosis from:

1. Inflammatory infections—metritis colli—but inflammation usually affects the whole vaginal portion uniformly. The consistency is not so hard, the mucous membrane is intact, and follicles are seen. For example, a case in hospital, the microscope decided.

FLAT CANCEROUS ULCERATIONS.

Flat cancerous ulcerations have to be distinguished from:

1. Erosions, if developed upon a hard inflammatory base or associated with ectropion, or the surface becomes rough on account of thick papillary erosions. Inspection decides. An erosion surrounds the external os evenly, and has a glistening, shiny appearance and bright red color, as it is covered by columnar epithelium, whilst a cancer is duller in color and rougher, even if ulceration is quite superficial. The erosion has no sharp border, but merges gradually into the squamous epi-

thelium of the vaginal portion—outline irregular—and pits or follicular ulcers are often seen on the surface. But if the erosion has lost its epithelium the microscope decides.

2. Simple ulcers, due to prolapse or a pessary, or cauterization, or croupous processes, lack induration, and at the borders healing is often seen.

3. A tubercular ulcer is similar to cancer, but is very rare. It surrounds the external os. Its edges are undermined; the floor is granular, but not indurated; yellow miliary tubercles may be seen; also, the disease is found elsewhere, or the microscope shows a tubercle structure.

4. Chancroids (soft sore) are usually small sores, becoming larger by confluence; have elevated borders; the floor has a croupous membrane, but is not indurated. Ulcers are multiple, and contact ulcers are found; also ulcers on the vagina or vulva.

5. Syphilitic ulcers:

(a) Initial lesion.

(b) Degenerative papule.

(c) Gumma.

Degenerative papule is a solitary indurated and shallow ulcer, with indistinct border and dirty copper-red color, with greasy exudate on its floor. The anterior lip is the favorite side.

6. Condylomata lata, or papulous ulcers, are elevated slightly, and covered by a yellowish debris. They are multiple, and other papules may be found on the vulva.

7. Gummata are rare. The ulcers are elliptical, well-defined, shallow, and the floor covered by a pus-like exudate which, on separation, leaves bleeding granulations. It is situated usually to one side of the external os, and extends by serpiginous border. One may demonstrate the lesion elsewhere, also the Wasserman reaction, or the presence of spirochaete may be shown.

DIAGNOSIS OF CERVICAL CANCER.

This is more difficult, especially if the os is closed, but otherwise when the os is patulous. Then ulceration, the absence of epithelium, and especially friability on scraping with the curette is diagnostic.

INFILTRATING CANCER.

1. Here diagnosis depends on change in shape of the cervix and its consistency. The surface becomes distended on one side perhaps, and the canal displaced. Its consistency is cartilagin-

ous. If infiltration is high up in the cervix, a rectal examination may help, but the best plan is to remove a piece of tissue with the curette and examine histologically, or even to curette the body as well as the cervix, and vice versa.

DIFFERENTIAL DIAGNOSIS.

1. Metritis or endocervicitis; but here the condition is uniform, and the mucous membrane is intact.
2. Follicular hypertrophy; but here the mucous membrane is intact, and the follicles shining through may be punctured.
3. Interstitial myomata are more rounded, that is, better outlined, and surrounded by soft tissue, while cancer, owing to inflammatory reaction, is not. Ulceration favors cancer.
4. Chronic cervical catarrh in old females. Here the mucous membrane feels rough, uneven and nodular, owing to the granular depression and the surrounding fibrosis, but the mucous membrane is intact and the curette gets no tissue. The microscope decides.

CANCER OF THE UTERINE BODY.

Cancer occurs here about one-fifteenth as often as in the cervix, but is very important to diagnose, since most corporeal cancers arise after the menopause. Hence, there are two important signs.

1. Hemorrhages.
2. Simpson's pains, regular labor-like pains, lasting several hours and recurring at definite times of the day.

But there are no characteristic bi-manual palpatory findings in cancer of the body. The size of the uterus may be normal or even atrophic. Later, it may resemble a fibroid or metritic uterus. Diagnosis is made by exploring the cavity.

1. By the sound, which distinguishes from retained decidua or fungus endometritis, by presence of hard nodules or depressions when cancer is present. If the interior seems smooth, cancer may be excluded, but if there are irregularities of the surface the microscope is necessary. The microscope is the proper method of diagnosing early cancer of the body. Digital exploration may be employed if the os is open, plus curettage, but if the cervix is closed, curettage is employed, and if negative digital exploration is then used; but the latter is more dangerous, besides palpation is not so sure as the microscope.

DIFFERENTIAL DIAGNOSIS.

If the curette is used, the microscope decides; if a digital exploration, then one has to distinguish from:

1. Adenomyoma.
2. Sarcoma.
3. Degenerating fibroid.
4. Mucous polyps.
5. Remains of abortions.
6. Chronic metritis.

But cancer is distinguished by the two signs of neoplasm and degeneration.

Although corporeal cancer occurs only about one-fifteenth as often as the other varieties, still it is more insidious in its mode of onset. It is more frequent in spinsters and in barren wives than in multipara. This corresponds with the clinical experience that it is frequently associated with fibroids, and fibroids are a result of the barren or the celibate state. It is interesting to note that cancer of the body of the uterus has been found to follow double ovariectomy, and since this is practised occasionally for bleeding fibroids near the menopause it is worth remembering.

Again, sub-mucous fibroids are often associated with changes in the endometrium, which not only cause excessive bleeding but set up also inflammatory conditions, giving rise to salpingitis, leucorrhea, etc., but also render the mucous membrane more susceptible to cancer.

Bland-Sutton (Burghard's System of Surgery, vol. 4, p. 52) states that in patients submitted to hysterectomy for fibroids, over the age of fifty years, about 10 per cent. will be found to have cancer of the corporeal endometrium.

Hence, one may sum up the early diagnosis of uterine cancer by stating that:

1. The family history is important in discovering a predisposition.
2. The personal history is important in deciding a predisposition. For example, cervical cancer is almost exclusively a disease of women who have borne children, or at least been pregnant. Hence, there seems good reason to suppose that injuries and their sequelæ are predisposing factors. Again, corporeal cancer is chiefly the disease of spinsters and barren wives, and these are the patients who suffer from endometritis and fibroids.
3. Chronic irritations are important etiological factors; for example, lacerations in multipara, fibroids and endometritis in nullipara.

4. The warnings or prodromes are:

(1) The red flag of metrorrhagia after the menopause, and the Simpson pains in corporeal cancer.

(2) The unusual discharge in cervical cancer.

(3) The bleeding after coitus in the vaginal variety.

Since being forewarned is forearmed, the way to get an early diagnosis is:

1. To educate women, as far as possible, to regard any unusual hemorrhage or discharge after the menopause, or even before it, as a danger signal.

2. To submit all patients consulting one for these symptoms to a most careful examination.

3. To never temporize or delay, but, if necessary, to have an expert in consultation; or, if impossible, at least to use every available means to arrive at a diagnosis; and among these is a careful histologic examination of the curettage, or a piece of the suspicious growth, for after all the microscope is the supreme test in many of these cases.

1. The *Lancet*, Vol. II., 1909, p. 691.

2. Bergmann, *Systems of Surgery*, Vol. II., p. 592.

PROPOSED STERILIZATION OF CERTAIN DEGENERATES*

ROBERT R. RENTOUL, M.D., ETC.

In 1903 I proposed—among other items—that it should be made illegal for any person to issue a permit to marry, or to join in marriage, or to marry, any idiot, imbecile, feeble-minded, epileptic lunatic, chronic inebriate, habitual vagrant, habitual criminal, drug habitue, sexual pervert, deaf mute, or markedly neurotic. I further proposed that all the above—these not being legally responsible for their actions—should be so surgically operated upon that they could neither beget nor conceive offspring. These proposals I would have brought forward some ten years antecedent to 1903, could I have induced some publisher to publish them! But it is a strange feature in the publisher's moral standard that he will bring out a novel reeking of the sensual, erotic and prurient, but will refuse to publish a work relating to the *mental* conditions of poor humanity.

The laws relating to the marriage of degenerates in the United States of America are of educational value, but to the sane only, as it is not just nor reasonable to punish lunatics and the feeble-minded for their marriage or other actions; it can be at once seen that such laws are to these of no use. Nor will any practical person suggest that the feeble-minded consider the question of marriage when begetting offspring. Were there a compulsory medical examination of every person before marriage, the above laws would be more useful. But here again the degenerate class would beget and conceive—marriage or no marriage; law or no law. Some years ago I called attention to the case where five weak-minded unmarried females had been delivered of fifteen idiot infants in a workhouse. Dr. Potts next told of where, in one workhouse, sixteen feeble-minded unmarried females had no less than 116 idiot children. Later Dr. Branthwaite has pointed out that 92 habitual inebriate women had had 850 infants. Will these poor demented demand marriage before maternity? I think, to sterilize them is the only real cure. It was for this reason I suggested that we should surgically sterilize the degenerate classes. I proposed that in the female we should divide and ligature the Fallopian tubes (fallectomy) and in the male either divide and ligature the vasa deferentia (vasectomy), or divide and ligature the spermatic

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cords (spermeotomy). These are simple and harmless operations; they neither injure the mental nor physical condition; nor do the first two weaken the desire or power. They effectually, however, prevent procreation. They are fully described in the second edition of my work, "Race Culture; or Race Suicide."

In this country there is a steadily growing feeling in favor of my proposal. It is being now discussed in France, Germany and Switzerland—yet so far America is the only country which has legislated upon my proposed operation.

Thus on February 10th, 1907, the State of Indiana passed the following Act:

"An Act entitled 'An Act to prevent procreation of confirmed criminals, idiots, imbeciles and rapists—providing that superintendents or boards of managers of institutions where such persons are confined shall have the authority and are empowered to appoint a committee of experts, consisting of two physicians, to examine into the mental conditions of such inmates.'

"Whereas heredity plays an important part in the transmission of crime, idiocy and imbecility, therefore be it enacted by the General Assembly of the State of Indiana that on or after the passage of this Act it shall be compulsory for each and every institution in the State, entrusted with the care of confirmed criminals, idiots, rapists and imbeciles, to appoint upon its staff, in addition to the regular institution physician, two skilled surgeons of recognized ability, whose duty it shall be, in conjunction with the chief physician of the institution, to examine the mental and physical condition of such inmates as are recommended by the institutional physician and board of managers. If, in the judgment of this committee, procreation is inadvisable, and there is no probability of improvement of the mental condition of the inmate, it shall be lawful for the surgeons to perform such operation for the prevention of procreation as shall be decided safest and most effective. But this operation shall not be performed except in cases that have been 'pronounced unimprovable.'"

This Act does not specify the operation to be performed: it includes confirmed criminals and rapists; it relates only to those confined in institutions. It fails in not providing a heavy penalty against those who sterilize degenerates without official sanction.

On April 20th, 1909, the State of California legislated as follows:

"Chapter 720. An Act to permit asexualization of inmates of state hospitals and the California Home for the Care and Training of Feeble-minded Children and of convicts in the State prisons. The people of the State of California, represented in Senate and Assembly, do enact as follows:

"Section 1. Whenever, in the opinion of the medical superintendent of any State hospital, or the superintendent of the California Home for the Care and Training of Feeble-minded Children, or of the resident physician in any State prison, it would be beneficial and conducive to the benefit of the physical and mental or moral condition of any inmate of the said hospital, Home or State prison, to be asexualized, then such superintendent or resident physician shall call in consultation the General Superintendent of State Hospitals and the Secretary of the State Board of Health, and they shall jointly examine into all the particulars of the case with the said superintendent or resident physician, and if, in their opinion, or in the opinion of any two of them, asexualization will be beneficial to such inmate, patient or convict, they may perform the same; provided that in case of an inmate or convict confined in any of the State prisons of the State, such operation shall not be performed unless the said inmate or convict has been committed to a State prison in this or some other State or country at least two times for some sexual offence or at least three times for any other crime, and shall have given evidence while an inmate in a State prison in this State that he is a moral and sexual pervert, and provided further that in the case of convicts sentenced to State prison for life, who exhibit continued evidence of moral and sexual depravity, the right to asexualize them, as provided in this Act, shall apply whether they have been inmates of a State prison either in this or any other State or country more than one time."

It will be seen that this Act differs considerably from that of Indiana. Thus, the Indiana Act places the carrying out of the Act upon two skilled surgeons and the institution physician, these forming a "committee of experts." If this committee think sterilization advisable, then the operation takes place.

In the California Act, the superintendent or resident physician must call in consultation the General Superintendent of State Hospitals and the Secretary of the State Board of Health—two very important officials.

The Indiana Act refers to "confirmed criminals, idiots, imbeciles and rapists." But the California Act follows my orig-

inal suggestion in so far as it includes those guilty of sexual offences, and moral and sexual perverts. It also applies to those who have committed such offences outside the United States.

Neither Act lays down what operations shall be performed—vasectomy, spermectomy, fallocotomy, ovariectomy, or orchotomy. The Californian Act uses the word “asexualized”—thus permitting ovariectomy and orchotomy. This is a very grave mistake, as my proposals would in no way rob the patient of his or her sex characteristics. To “asexualize” persons certainly means to rob them of their sex powers and sex characters. Both Acts include males and females. Neither of the Acts make it an offence if other surgeons operate on persons for the purpose of preventing impregnation or conception. This also is a very grave lapse, and should be remedied forthwith.

On August 12th, 1909, the State Legislature of Connecticut enacted as follows:

“An Act concerning operations for the prevention of procreation. Be it enacted by the Senate and the House of Representatives in general assembly convened:

Section 1. The directors of the State Prison and the Superintendent of State Hospitals for the Insane at Middletown and Norwich are hereby authorized and directed to appoint for each of the said institutions, respectively, two skilled surgeons who, in conjunction with the physician or surgeon in charge at each of the said institutions, shall examine such persons as are reported to them by the warden, superintendent, or the physician or surgeon in charge to be persons by whom procreation would be inadvisable.

“Such Board shall examine the physical and mental condition of such persons, and their record and family history, so far as the same can be ascertained, and if, in the judgment of the majority of the said Board, procreation by any such person would produce children with an inherited tendency to crime, insanity, feeble-mindedness, and idiocy or imbecility, and there is no probability that the condition of any such person so examined will improve to such an extent as to render procreation by such person advisable, or if the physical or mental condition of any such person will be substantially improved thereby, then the said Board shall appoint one of its members to perform the operation of vasectomy or oophorectomy, as the case may be, upon such person. Such to be performed in a safe and humane manner; and the Board making such examination, and the surgeon performing such operation shall receive from the State such

compensation for services rendered as the warden of the State Prison or the superintendents of either such hospitals shall deem reasonable.

"Section 2. Except as authorized by this Act, every person who shall perform, encourage, assist in or otherwise promote the performance of either of the operations described in Section 1 of this Act, for the purpose of destroying the power to procreate the human species; or any person who shall knowingly permit either of such operations to be performed upon such person—unless the same be a medical necessity—shall be fined not more than one thousand dollars, or imprisoned in the State Prison not more than five years, or both."

The second section of this Act is of the utmost importance. It will be noted that the Act, unfortunately, provides for the removal of the ovaries. But why remove the ovaries when division and ligature of the Fallopian tubes will act as perfectly? My whole aim is not to remove either the testes or ovaries.

In 1905, the Legislature of the State of Pennsylvania passed a Sterilization Bill, but so far the State Governor has refused to sign it. This bill is as follows:

"Whereas heredity plays a most important part in the transmission of idiocy and imbecility.

"Therefore, be it enacted by the Senate and House of Representatives of the State of Pennsylvania that on the first day after the passage of this bill it shall be compulsory for each and every institution in the State entrusted with the care of idiots and imbecile children to appoint upon its staff at least one skilled neurologist and one skilled surgeon of recognized ability, whose duty it shall be, in conjunction with the chief physician of the institution, to examine the mental and physical condition of the inmates.

"If, in the judgment of this committee of experts and the Board of Trustees, procreation is inadvisable, and there is no probability of improvement of the mental condition of the inmate, it shall be lawful for the surgeon to perform such operation for the prevention of procreation as shall be decided safest and most effective, but this operation shall not be performed except in cases that have been pronounced non-improvable."

This Act refers only to hospitals for idiot and imbecile children, and does not refer to habitual criminals, sexual perverts, lunatics, or other degenerates.

In 1906, the Legislature of the State of Wisconsin discussed

a sterilization bill, but postponed passing it until an investigation was made regarding the mental defectives of the State.

In 1908, the State of Oregon Legislature passed a sterilization bill, but as the State Governor did not sign it, it has not yet become law. It will, however, be again presented in January, 1911, when, if a majority of each House vote for its passing again, it will become law, no matter whether the Governor refuse to sign it.

This year (1910), a bill for sterilization was introduced into the Ontario (Canada) Legislature, but the Prime Minister spoke so strongly against it that the bill was withdrawn.

These references complete my knowledge regarding the bills passed and rejected by different parliamentary bodies. A reference to the last edition of my work shows that many influential persons are in favor of it. Later than its issue, Dr. J. Kerr, Medical Officer to the Education Committee of the London County Council, in his 1908 report, when writing on mentally defective children, and their proposed segregation, says: "A much more humane and scientific idea than mere segregation, and more economical to the state, would be to deprive such individuals of the objectionable powers and capacities, at the same time relieving them of the passions and desires before the time at which these develop." (P. 62.)

In 1906, Dr. Stansfield, Medical Superintendent, Banstead Asylum, reported to the Asylums Committee, Lond. C.C.: "The question of the sterilization of the insane becomes more and more pressing." He further pointed out that the birth rate among the degenerate class is not falling at the same rate as that of the sane. Statistics show that the average fertility of degenerate parents is 73, when compared with 4 of non-degenerate parents.

What are the alternatives to my proposals?

Forced Abortion.—Dr. Clouston, in the 6th edition of his "Mental Diseases," recommends abortion and premature labor in cases of marked insanity. This is of little use. The woman could become pregnant repeatedly, and every neurotic female would be demanding abortion.

Murder of Degenerates.—To me it is extremely painful to find so large a number of apparent Christians demanding the murder of a class of persons who are not legally accountable for their actions nor mental conditions. It would be a strange action for the community to appoint certain medical murderers to kill off degenerates! Fancy a poor struggling practitioner being offered £50 or £100 to kill an idiot child, or a senile rela-

tive! The mere idea of the lethal chamber is repulsive to any thoughtful man or woman.

Forbidding the Degenerates to Beget Children.—Such a proposal is as helpful as is that of abortion or murder. The degenerates may be said to fear neither God nor law. Certainly he or she will not consider the sad result of either actions; and practical men know that the mental and physical contamination of our race does not begin only after a marriage ceremony.

Suicide.—While one considers the large yearly number of insane and others who perform suicide, and who thus help to keep down the great total of weak-minded, weak-willed and degenerate classes, it is to be noted that, while suicide increases, so also does degeneracy; therefore suicide will not give much help.

Lifelong incarceration.—Were all degenerates likely to beget tainted offspring so dealt with, the expense to the taxpayer would be unbearable. It is more than heavy at present. In my work, "Race Culture or Race Suicide," p. 36, I show that in one year in the United Kingdom we expended £13,081,000 on the upkeep of the mentally and physically degenerate classes. This expenditure is absolutely unproductive. Not only so, but it renders the work of these asylum doctors and others therein engaged absolutely unproductive. The Lunacy Commissioners have lately pointed out that asylum expenditure has increased from £200,535 to £370,474, or 78%; that is, no decrease of insanity, but enormous increase of expenditure. I think that £50,000,000 yearly would not cover the cost; more than we expend upon our navy each year! One lunatic has been known to cost Poor Law guardians £1,300. But the question of expense is not the only objection to lifelong incarceration. The proposal is cruel. It is suggestive of punishment, and punishment of the irresponsible. There is surely a large degenerate class who could be allowed at large, if only they had been sterilized—the sexual degenerate, the sane epileptic, the harmless weak-minded, the confirmed drug habitue and inebriates, the confirmed vagrant and confirmed criminal, the prostitute and the markedly neurotic class. These are active begettors of markedly degenerate children, but they can work, or be made to work. Something less drastic and less expensive to the taxpayer than lifelong incarceration is wanted, and that is my simple, non-dangerous and non-expensive proposal—sterilization.

This much is certain: For years we have been content to build palatial asylums and overload the taxpayer, so that he is

so pressed that he can neither marry, or if married, have a large family. The Commissioners in Lunacy state that, in January, 1909, there were, in England alone, 128,787 insane officially reported. (We know there are some thousands more *not* reported.) In one year the increase of the insane—even with the help of those poor suicides—was 2,703. In 1859, there were only 36,742 officially-known insane. Since then the insane rate has increased by 250%, while the population has increased only 81%—a magnificent display for a nation supposed to be educated, even up to the seventh school standard! One in every 250 of the population is officially described as a lunatic! One in every five of criminals is a lunatic. Two of every three in inebriate houses is feeble-minded. These figures are but a fingerpost pointing thoughtful minds to a ghastly future. The medical inspection of school children is bringing a sad state of affairs to the point. The mentally defective children—about 150,000 in number in England—will beget an army of insane. We have about 34,015 “sane” (?) epileptics—all potential begetters of more insane. Sociologists know that a very large proportion—probably 75%—of vagrants, criminals, alcoholics, deaf-mutes, drug habitues, sexual perverts, rapists, the weak-willed, the markedly neurotic, and prostitutes, are mentally defective, and *must* bring forth degenerates if we curse them by allowing them to. Shortly before Dr. Barnardo died (1904), he wrote me, saying: “Some step will have to be taken in the near future if we are to protect the nation from a large addition of the most enfeebled, vicious and degenerate type.” Do we propose to permit the degenerate class to go on begetting more and more degenerates until there are more insane than sane, and until we sink the already overtaxed taxpayer beyond recovery? To-day unthinking society says, “Yes.” I feel certain, however, that the to-morrow will say, “No,” and with no uncertain, cowardly, popularity-hunting or shuffling voice.

Hartington Road, Liverpool, July, 1910.

Progress of Medical Science.

MEDICINE.

IN CHARGE OF W. H. B. AIKINS, F. A. CLARKSON,
BREFNEY O'REILLY AND F. C. HARRISON.

Treatment of Typhoid Fever in Children

Marini observes that among the methods used for attacking typhoid fever in children, "frigotherapy" renders excellent service and constitutes the best plan of lessening the high temperature. It is simple and easy of application, causes no pain and involves no risk. The ice-bag is applied to the abdomen from the beginning of the illness. To avoid scars, a thick flannel is placed underneath, and only in serious cases is the ice applied directly to the abdomen. The application of the ice-bag is renewed every four hours, and it must be kept regularly in place until recovery. It must not be displaced by the child's movements, and to this end it should be fixed by a bandage (but not too tight). To this treatment there do not apply the same contra-indications as to the cold bath, which often gives rise to painful reactions. The ice-bag prevents the peritonitis which is wont to develop early in these cases, and it causes a manifest lessening of visceral congestion. It also has a real cardio-tonic effect, and wards off thus some of the frequent complications of the typhoid infection. The continuous application of the ice is stopped only when the temperature has definitely fallen and the pulse is normal. Intestinal antisepsis and alimentary hygiene must not be omitted.—Translated from *Giornale Internazionale delle Scienze Mediche*, by Harley Smith.

Classification of Constipation in Children

Gaujoux observes that chronic constipation, so frequent in babies, must be treated not symptomatically, but pathologically. The physiological conditions of a regular evacuation in children are the following:

(1) The digestive tube must not be obstructed or too greatly contracted. (2) The intestinal secretions, which excite and lubricate the intestinal mucosa, must not be diminished. (3) The

mucosa must be sensitive to the contact of the fecal material. (4) The nerve centres, which regulate the peristalsis, must not be changed or inhibited. (5) The muscular fabric must possess normal contractility. Hence arises a very great etiological diversity of constipation in babies. There are the following three groups of constipation:

1. Constipation from some obstacle in the regular course of the fæces.
2. Constipation from modification of the intestinal contents.
3. Constipation from defect in the action of the expulsive muscular fibres.

In the first group are included those forms with complete occlusion (volvulus, intussusception, atresia, stenosis), those with incomplete occlusion (congenital or cicatricial contractions, spasms, torsions).

The second group includes constipation from diminution of ingesta, from increased absorption of the liquid parts, or from too perfect assimilation (Schmidt), from diminution of the intestinal secretions (fever), from modification of the intestinal contents as regards the quality of the foods (the most frequent form in the clinic).

The third group comprises constipation from mucous anesthesia and absence of the evacuator reflex (too warm lavage); from paralysis of the nerve centres which regulate peristalsis (solar and mesenteric plexuses); from primary atony of the intestinal musculature (Herschsprung's disease), or atony secondary to a neighboring inflammatory process (peritonitis, enteritis).

Several pathogenic factors may be associated, but a clinical study of each case will enable the physician to dissociate these factors and to institute an efficacious treatment.—Translated from *Giorn. Internaz. delle Sci. Med.*, by Harley Smith.

OBSTETRICS AND GYNECOLOGY.

IN CHARGE OF ADAM H. WRIGHT, K. C. M'ILWRAITH, FRED. FENTON
AND HELEN MACMURCHY.

The Treatment of Placenta Praevia

E. Napier Burnett, M.D., F.R.C.S.E.

The interests of the mother are frequently opposed to those of the child, at least in some of the methods. These are as follows:

1. Rupturing of membranes.
2. Plugging of vagina.
3. Use of dilating elastic bags.
4. Cæsarean section.
 - (a) Vaginal.
 - (b) Abdominal.
 - (c) Supra-symphysial.
5. Accouchement forcé.
6. Bi-polar version.
7. Palliative or expectant treatment.

1. *Rupturing of Membranes.*—Should the patient be in labor, with vigorous pains and the vertex presenting, this treatment is justifiable, for the head will be forced down on to the bleeding site and thus control the hemorrhage. But these conditions are rarely present, and the following objections to this method are potent: (1) Malpresentations are frequent, and no other part except the vertex would exercise the pressure efficient to stop the bleeding. (2) The cases are exceptional in which the patient is in labor at the commencement of the bleeding. (3) The pains may cease and permit of further bleeding.

2. *Plugging of Vagina.*—Plugging should be always done by antiseptic gauze rather than cotton wool. This treatment has the advantage that it tends to induce labor, but it is indicated only when there is a doubt as to the diagnosis, *i.e.*, when one has been unable to feel the placenta—when there may be placenta prævia lateralis or accidental hemorrhage. The objections to plugging are: (1) The bleeding may continue behind the plug. (2) Plugging in haste is often followed by sepsis.

3. *The Insertion of Dilating Bags within the Internal Os.*—The membranes should first be ruptured, so that the dilating bag be inserted within the amniotic sac. Barnes' bags are now seldom

used; much better is De Ribes' bag, which is inserted in the collapsed state by a special forceps and thereafter filled with saline or some antiseptic fluid. The objections to the treatment are: (1) The bag may rupture. (2) It is often not at hand or ready for use when required. (3) It is difficult to apply in private practice. (4) It sometimes fails to induce labor. (5) When a weight has to be applied to the end of the tube, thus producing forcible dilatation of the cervix, rupture of the uterus, with fatal bleeding, has occurred. (6) Infection may be carried up from the vagina.

4. *Cæsarean Section*—Some 18 years ago the high mortality of placenta prævia induced Lawson Tate to condemn the ordinary treatment, and to suggest Cæsarean section. This suggestion lay dormant until recently, when it has been revived. It is now strongly advocated by a section of the German school, and especially by Kronig. But placenta prævia is an emergency of general practice demanding treatment on the spot, and Cæsarean section is suitable only for hospital cases, and even then is seldom justifiable, for its maternal mortality is no better than that of some of the older methods *when efficiently applied*. As regards the improved prospect of the child, one is rarely justified in risking the mother's life by such an operation, for the production of a sixth, seventh, or eighth month's foetus, whose prospects of survival are meagre. The indications for Cæsarean section are few, but in certain selected cases it may become the operation of election, such as (1) placenta prævia in primiparæ with rigid cervix or tumor of cervix; (2) placenta prævia centralis in primiparæ; (3) cases complicated by pelvic deformity. In the great majority of cases of placenta prævia Cæsarean section is no advance.

5. *Accouchement Forcé*.—Rapid dilatation of cervix, with forcible extraction of child. Troube strongly condemns this treatment, and quotes a large maternal mortality from it (*Zentral. f. Gynak*, No. 43, 1908).

6. *Bi-polar Version* of Braxton Hicks.—*This is the treatment of placenta prævia for general practice, and if it is applied immediately the diagnosis is made; and if the practitioner will rest content when he has brought down a foot, and not proceed to forcible extraction of the child, he will reduce the maternal mortality to something approaching that claimed for Cæsarean section. But this treatment has not produced its best results, largely because it is not adopted the moment the diagnosis is made, but reserved until the patient is in an extreme condition.*

Further, its good results are much impaired when the practitioner becomes impatient and proceeds forthwith to extract the child.

7. *Palliative or Expectant Treatment.*—It is to be regretted that this treatment is still advocated in some modern text-books, e.g.: “If the loss of blood be slight, and especially if the fœtus be yet viable, the expectant plan is indicated. The patient should lie down, be lightly covered, use cold drinks, and if much pain or restlessness be present, opium may be given. She ought to be directed not to take exercise, to avoid as much as possible the erect position and all straining at stool. It would be well if there was someone at hand who was properly instructed in the application of the vaginal tampon, so that this may be at once used, should grave hæmorrhage occur.” So long as this teaching is followed the high mortality of placenta prævia will continue. It is bad, no matter what the period of gestation, or whether the child be viable or not.—*North. and Durham Med. Jour.*

Vaginal Douches of Lactic Acid

As the result of numerous investigations it has been shown that lactic acid is present in the normal vagina up to a strength of 0.3 to 0.5 per thousand. Dr. N. Cukor, in the *Klin. Therap. Woch.*, argues from this fact that lactic acid should be used in vaginal douches in place of lysol, bichloride, and the rest of the ordinary drugs used, which are all more or less irritating. He believes that healthy women should use these douches daily to replace the lactic acid lost after bathing, etc., and declares that they hasten the return to the normal condition after menstruation. In cases of much discharge from the uterus or cervix their employment is indicated. Erosions of the cervix and catarrhal conditions of the genital apparatus are rapidly cured by them, and they can effectually be made use of in the place of all other antiseptic solutions.—*The Hospital.*

Influence of a Salt-free Diet in Habitual Death of the Fœtus

Prouvost (*Bull. de la Soc. d'obstét. de Paris*) gives the history of a case in which the ingestion of too much salt by the mother apparently caused death of the fœtus by generalized œdema, caused by intoxication with chlorides. The mother had two living healthy children, and then seven pregnancies in which

the child was born dead with generalized oedema. As she was very anxious to have children, the mother was put on a salt-free diet, eating meals specially prepared without salt, except at dinner, which she ate with the family. This diet was kept up for some years, when pregnancy resulted in the birth of a living healthy child, followed two years later by a second living child, during whose period of gestation the salt-free diet was observed. The author believes that the results of treatment would indicate that the patient, who was exceedingly fond of salt, was unable to eliminate enough salt for two organisms, and that while her excessive salt eating did her no harm, the foetus retained an abnormal amount of it, which caused oedema and death.—*Am. Jour. of Obst.*

Scopolamin and Morphine in Narcosis and in Childbirth

In a report to the Council on Pharmacy and Chemistry of the American Medical Association, R. A. Hatcher (*Jour. Amer. Med. Assn.*) states that the use of scopolamin and morphine alone, and unsupported by chloroform, ether, or other anesthetic, is wholly unsuited for general anesthesia. The use of scopolamin and morphine preliminary to that of chloroform or ether has certain advantages, but it renders the problem of anesthesia more complicated, requiring extreme care, judgment, and discretion. There are numerous contraindications to the use of scopolamin and morphine, both in surgery and in childbirth. It seems probable that scopolamin and morphine may have a sphere of usefulness in childbirth as well as in surgery, but there are many details which require perfecting before they can become generally useful even in institutions. Scopolamin and morphine are wholly unsuited, in the present state of our knowledge, for use in general obstetric practice. The pharmacology of scopolamin and morphine, and of the interactions of the two, are of prime importance in the study of their uses in surgery and obstetrics. There is no possible excuse for the employment of ready-made mixtures (pills or solutions) of scopolamin and morphine, since each substance must only be used with reference to its individual actions, bearing in mind that these actions may be greatly augmented or modified by the other alkaloid. The danger of the child must be kept constantly in mind, even when the utmost care has been exercised in the selection of cases suitable for the use of scopolamin and morphine in childbirth, and when small doses are ineffective in inducing the "twilight sleep," large doses should not be used.—*Am. Jour. of Obst.*

Treatment of Pyelitis of Pregnancy

P. M. Pilcher (in an article published in *Surg., Gyn., Obst.*) says that during the course of cystoscopic examinations he has often observed that when the patient was in the recumbent position the droppings from the ureteral catheter came very slowly, but as soon as the patient was raised up, and especially if she assumed the sitting posture, the droppings increased fifteen to twenty times the number that were previously noted. His conclusion was that there was more to be gained from favoring drainage of the renal pelvis by a position in which the kidney was on a higher level than the bladder than there was from any fancied relief of pressure on the ureters, such as some attempt to obtain by putting the patient in the knee-chest position. In a given case it is perfectly safe, should the symptoms not be too severe, to wait for eight or ten days without attempting to catheterize the ureters; if at the end of this time there be a persistent temperature with pain and pyuria, or even without pain, it is indicated to pass a catheter to the pelvis of the affected kidney to drain it thoroughly, and then instill one dram of 25 per cent. argyrol solution. If there is a large amount of retention in the pelvis of the kidney, with considerable pus present, it is indicated to leave the ureteral catheter in place, after washing the pelvis of the kidney, for four or five hours or even longer, repeatedly washing the pelvis of the kidney with some antiseptic lotion.—*Am. Jour. of Obst.*

Basedow's Disease and Pregnancy

Bonnaire has observed two cases of pregnancy complicated with exophthalmic goitre, one in a tertio para, the other in a primipara; the women were delivered at term; the one had no sequelæ, while in the other dilatation of the right heart, exophthalmus, and enlarged thyroid persisted. It is a rare occurrence, only three cases were found in 45,000 women.—*N. Y. Med. Jour.*

A foreign body lodged in a bronchus may present a symptom-complex identical with pulmonary tuberculosis in a child—the history of aspiration of the foreign body may be wanting.—*American Journal of Surgery.*

Editorials.

TYPHOID FEVER

It may be that we attach too much importance, relatively speaking, to tainted water as a cause of typhoid fever. It is, of course, true that we consider impure milk a frequent cause.

In a somewhat serious epidemic, which occurred in the spring and early summer of this year in Budapest, Hungary, on careful examination it was proved conclusively that the epidemic was not due to the condition of the water. In a certain proportion of cases the disease was caused by contaminated milk, imported into the city from certain outlying districts. In a certain proportion of cases the disease was caused by the consumption of contaminated fruit, butter and soft cheese. Investigation showed a somewhat remarkable, as well as very dangerous, condition in a part of the food supply. Out of 200 samples of food taken from as many retail dealers, 60 were found to be unfit for consumption. Perhaps it is hardly realized in our own country that a large portion of the beautiful fruit placed on our tables for ordinary consumption has passed through the hands of individuals who, to express the matter very mildly, are not scrupulously clean.

THE VAGARIES OF FIBROMYMATOUS TUMORS

In response to a special invitation, Dr. James F. W. Ross, of Toronto, read a paper on the "Vagaries of Fibromyomatous Tumors" before the Brant County Medical Association in March last.

Dr. J. A. Marquis wrote to one of our Editors, stating that "It would be gratifying to the members of our Society to have it printed in the CANADIAN PRACTITIONER AND REVIEW." He also sent the paper by the same mail.

This paper was published in our August number; but, through a very curious error, Dr. Marquis was named as the writer.

The paper is very interesting for many reasons. Dr. Ross has had rare opportunities for observing the evolution which has taken place during the last thirty years in connection with the treatment of uterine fibroids. We should perhaps go a little further, and state that no man in the world has done more in the way of improving the old methods of operation which were in vogue twenty-five years ago. The old division of such tumors into sub-peritoneal, intramural and sub-mucous tumors is accepted. In addition, however, special reference is made to other varieties, such, for instance, as those growing in the neighborhood of the cul de sac of Douglas, either in front or behind the rectum.

The author refers to the following changes which are apt to take place in such tumors: Congestion, œdema, cystic degeneration, necrosis, calcareous change and malignant disease, and discusses the results of such changes and the treatment advisable.

In speaking of the modern operation, he states that it is now performed with as low a mortality in skilled hands as the operation of ovariectomy. He fears, however, that, as a consequence of the great success of modern operations, the pendulum is swung rather too far to the other extreme, and that now young women are practically unsexed, and are denied the opportunities of motherhood, owing to the ruthless use of the knife on fibroid tumors as soon as they make their appearance. His remarks concerning this part of the subject are exceedingly interesting from the standpoint of both the gynecologist and the obstetrician.

FLORENCE NIGHTINGALE

In our issue for July it was our pleasure to make certain references to one of the noblest women in the British Empire, Florence Nightingale, who completed her 90th birthday in May

last. Among her fastest friends and admirers were three Sovereigns of her beloved country—Victoria, Edward VII. and George V. The whole civilized world knows and regrets that this great woman has passed away.

Although she had been an invalid for a long time, and was under the constant care of a physician, her death, which occurred August 13, was somewhat unexpected. We extract from a very interesting article which appeared in the *Montreal Gazette* the following items respecting the great work performed by Florence Nightingale:

Some years ago the surviving British officers of the Crimean war held a banquet in London. One of their number proposed they should take a vote on the question, "What name connected with that war will live longest in history?" When the ballots were counted, lo and behold! every vote was for a woman, and when the name of Florence Nightingale was announced as the unanimous selection of the grizzled veterans the banquet hall rang with approving cheers.

As the pioneer in the system of trained female nurses for war, and as the ministering angel who saved thousands of lives and eased untold sufferings, Florence Nightingale won immortality on the bloody fields of the Crimea. This is the more remarkable as she was reared in luxury, and came of a race of peculiar delicacy of taste. Her father was William Edward Shore, a banker of Sheffield. On inheriting the estate of a kinsman named Peter Nightingale, he was compelled by the terms of the will to assume the name of Nightingale.

BENEVOLENT AS A CHILD.

The family spent much time in Italy, and the second daughter was born in May, 1820, in the city of Florence, from which her name was borrowed. She was a precocious child, and early in life made great advancement in music, mathematics and languages. Happening to visit a hospital, the impressionable girl at once announced that nursing was to be her mission in life, and she dropped her other studies to learn the art of caring for the sick.

Her parents took her to Egypt, but she turned from a life of idleness and pleasure to nurse sick Arabs in an hospital. On returning to London she ignored society to work in hospitals, where she laid the foundation of a practical training that proved of inestimable benefit to mankind for all subsequent time. In 1849 she went to Pastor Fliedner's school, conducted by the Protestant Sisters of Mercy, at Kaiserworth-on-the-Rhine, not far from Dusseldorf, and took a course of instruction in their methods of relieving distress. From Germany she went to France to examine various institutions in her chosen line of work.

Soon after her return to London she had an opportunity to undertake important work. Learning that the sanitarium for governesses was languishing for want of proper support, she volunteered her services free of cost. She also raised money for its support, and put it on a good financial basis, but impaired her health.

LEAVES FOR CRIMEA.

On October 21, 1854, she sailed with a band of 38 nurses—of whom 10 were Roman Catholic Sisters of Mercy and 14 members of an Anglican sisterhood—for Scutari. "I am naturally a very shy person," she says; certainly she had a keen horror of parade, and she started with her gallant band without public notice or farewell. At Boulogne, however, it became known that this company of ladies, with their uniform dark dress, were nurses on their way to the Crimea, and the white-capped fisherwomen of the place thronged round them and carried their luggage to the railroad station, scornfully refusing to let a man so much as touch an article.

The band of heroines reached Scutari on November 5, the very day of Inkerman. The great barrack hospital there was a huge quadrangle, a quarter of a mile on each face; its corridors, rising storey above storey, had a linear extent of four miles. The hospital, when the nurses landed, held 2,300 patients; no less than two miles, that is, of sick-beds—beds foul with every kind of vileness. The mattresses were strewn two deep in the

corridors; the wards were rank with fever and cholera and the odor of undressed wounds. And to this great army of the sick and the dying the wounded from Inkerman in a few hours were added, bringing the number up to 5,000. Into what Russell calls "the hell" of this great temple of pain and foulness moved the slight and delicate form of this English lady, with her band of nurses.

A. MIGHTY TRANSFORMATION.

Instantly a new intelligence, instinct with pity, aflame with energy, fertile with womanly invention, swept through the hospital. Clumsy-made devices were dismissed, almost with a gesture, into space. Dirt became a crime; fresh air and clean linen, sweet food and soft hands a piety. A great kitchen was organized which provided well-cooked food for 1,000 men. Washing was a lost art in the hospital, but this band of women created, as with a breath, a great laundry, and a strange cleanliness crept along the walls and beds of the hospital. In their warfare with disease and pain these women showed a resolution as high as the men of their race showed against the grey-coated battalions of Inkerman or in the frozen trenches before Sebastopol.

Muddle-headed male routine was swept ruthlessly aside. If the commissariat failed to supply requisites, Florence Nightingale, who had great funds at her disposal, instantly provided them herself, and the heavy-footed officials found the swift feet of these women outrunning them in every path of help and pity. Only one flash of anger is reported to have broken the serene calm which served as a mask for the steel-like and resolute will of Florence Nightingale. Some stores had arrived from England; sick men were languishing for them. But routine required that they should be "inspected" by a board before being issued, and the board, moving with heavy-footed slowness, had not completed its work when night fell. The stores were, therefore, with official phlegm, locked up, and their use denied to the sick. Between the needs of hundreds of sick men, that is, and the comforts they required was the locked door, the symbol of red tape. Florence Nightingale called a couple of orderlies,

walked to the door, and quietly ordered them to burst it open and the stores to be distributed!

It was, perhaps, in the operating-room that Florence Nightingale showed in its highest form the mastery she obtained over the spirits of her soldier patients. This fragile English lady was known to toil for twenty hours continuously amid her band of nurses and her miles of patients.

The miracle wrought by this band of nurses—this entrance of woman into the hell of British hospitals in the East—is capable of being expressed in cold statistics. They found the death-rate in the great hospital at Scrutari at 42 per cent.; they brought it down to 2 per cent.!

The Geneva Convention was held within ten years of Florence Nightingale's labors in the East, and now its red cross, gleaming on every modern battlefield since, is, in a sense, Florence Nightingale's monument.

All Europe rang with Miss Nightingale's praise at the close of the Crimean war, and all England was keenly excited to give her a triumphant reception on her return. With characteristic modesty, she evaded all demonstrations (though she could not but obey the summons to Windsor when the late Queen Victoria gave her the Cross of St. George), and, so long as health remained, she continued to devote herself to her self-imposed task of succoring the sick.

In December, 1907, it was announced that the King had been graciously pleased to confer on her the Order of Merit. She was the first woman to receive this eminent order, an order which includes only those who by signal achievement raise themselves to the very head of the class to which they belong.

LONGFELLOW'S TRIBUTE.

[It was the practice of Florence Nightingale to pay a last visit to the wards of the military hospital in the Crimea after the doctors and the other nurses had retired for the night. Bearing a light in her hand, she passed from bed to bed and from ward to ward, until she became known as "the Lady with the Lamp."]
This led Longfellow to liken her to St. Filomena, whose emblems were a lamp, a palm, a lily and a spear. He wrote:

Whene'er a noble deed is wrought,
Whene'er is spoken a noble thought,
Our hearts, in glad surprise,
To higher levels rise.

The tidal wave of deeper souls
Into our inmost being rolls,
And lifts us unawares
Out of all meaner cares.

Honors to those whose words or deeds
Thus help us in our daily needs,
And by their overflow
Raise us from what is low!

Thus thought I, as by night I read
Of the great army of the dead,
The trenches cold and damp—
The starved and frozen camp—

The wounded from the battle-plain,
In dreary hospitals of pain,
The cheerless corridors,
The cold and stony floors.

Lo! in that house of misery
A lady with a lamp I see
Pass through the glimmering gloom
And flit from room to room.

And slow, as in a dream of bliss,
The speechless sufferer turns to kiss
Her shadow, as it falls
Upon the darkening walls.

As if a door in heaven should be
Opened and then closed suddenly,
The vision came and went,
The light shone and was spent.

On England's annals, through the long
Hereafter of her speech and song,
That light its rays shall cast
From portals of the past.

A lady with a lamp shall stand
In the great history of the land,
A noble type of good,
Heroic womanhood.

Nor even shall be wanting here
The palm, the lily, and the spear,
The symbols that of yore
St. Filomena bore.

THE ONTARIO MEDICAL COUNCIL

The College of Physicians and Surgeons of Ontario is the Medical Parliament of the Province of Ontario. We think there can be no doubt that the Ontario Medical Council has accomplished much that is in the best interests of the profession and the public in the Province. As a direct consequence of the work of this very important body the standard of medical education in Ontario was for many years, and probably is now, the highest in North America. In the heat of the angry discussions that are going on now this fact should not be overlooked. It is difficult for the present generation of physicians to fully realize all that has been done in the interests of higher medical education.

Unfortunately it is now considered by many of the Council's warmest friends that its members during the past five or six years have lost sight of the high ideals and aims of its founders. If one carefully reviews the whole situation we think he may conclude that this is not, in the main, correct. There is now, however, a general consensus of opinion that serious mistakes have been made, and this fact is fully appreciated by the majority of its members. Some of the petty little money *mistakes* (to express it very mildly) cause in the minds of many friends of the Council a feeling of sadness and humiliation.

This journal has been probably the most steadfast and consistent supporter the Council has had in the Province during the last thirty-five years. Its early editors were close friends of the

organizers of the Council, and fully sympathized with them in all their efforts. Its various editors have always watched its proceedings very closely.

We think that the position of things medical in Ontario is at present very serious. The very existence of the Council is in peril. It seems strange that a large portion of its members are among the last to appreciate this fact. Perhaps, however, there is still greater danger that in the near future an amendment to the Medical Act will be passed, so radical in its nature as to deprive the Council of nearly all the powers it now possesses. In speaking thus we are not merely expressing editorial opinions; we are stating actual facts which have been known to many for two or three years.

Under existing circumstances it is surely better for the profession and the Council to face matters squarely, rather than *let things drift*. From all the information we have been able to gather during a period of some years we feel that we are in a position to state positively that the majority of the profession of Ontario urgently desire certain reforms, especially in the following directions: (1) Reduction of membership; (2) practise of economy in various ways; (3) modification of examinations.

Of course these suggestions are not new. The matters referred to have been discussed to some extent at recent meetings. May we hope that in the near future the Council will take some decided action in the direction indicated?

NOTES.

COLLEGE OF PHYSICIANS AND SURGEONS OF BRITISH COLUMBIA.

List of successful candidates in May examinations: Barrett, W. L.; Bavis, W. E.; Coghlin, W. A.; Davies, A. H.; Henderson, A.; Johnson, A. L.; Gray, E. J.; MacLean, C. G. G.; Paul, N. J.; McPherson, T.; Shaw, R. McL.; Stevenson, R. G.; Trousdale, F. H.; Scott, R. H.; Sutherland, J. A.; Robertson, Monica M. L.; Read, G. C.

Personals

Dr. E. E. King, of Toronto, has returned from his vacation at Hastings.

Professor Leathes, of the University of Toronto, has returned from England.

Dr. A. H. Rolph and Dr. F. C. Harrison, of Toronto, returned from England early in August.

Dr. G. W. Anderson, formerly of St. Michael's Hospital, Toronto, is pursuing post-graduate work in London.

Dr. G. Sterling Ryerson has returned from abroad. He spent some time at the Laboratoire Physiologique du Radium in Paris.

Dr. Edmund Boyd, of Toronto, was among those who obtained the license of the Royal College of Physicians of London in July.

Drs. Adam Wright, Allen Baines, H. A. Bruce, F. N. G. Starr, F. A. Clarkson, and A. McPhedran, Toronto, have returned from Europe.

Dr. H. J. James, a former resident physician of Muskoka Cottage Sanatorium, and late assistant superintendent Iowa State Sanatorium, has accepted the appointment as superintendent of the South Dakota State Sanatorium at Custer, S.D.

Dr. Louis Wickham, of Paris, a distinguished dermatologist, and director of the Research Laboratory of Radium, will visit Toronto this month and deliver a lecture at a special meeting of the Academy of Medicine, Toronto, on September 30th. While in the city he will be the guest of Dr. W. H. B. Aikins.

Among Toronto physicians attending the meeting of the British Medical Association in London were Drs. Adam Wright, H. A. Bruce, F. N. G. Starr, F. H. Cameron, G. S. Ryerson, F. M. Baldwin, E. Boyd, F. C. Harrison, A. H. Rolph, A. McPhedran, A. B. Macallum, H. T. Machell, Helen McMurchy and E. C. Burson.

Obituary.

JAMES K. JOHNSTONE

Dr. J. K. Johnstone, of Toronto, died August 10th, of pleuropneumonia, aged 61. He received M.D. from Victoria University in 1870, and practised for a time at Ingersoll. On account of ill-health he gave up practising 27 years ago, and was appointed General Government Inspector of Electric Meters, which position he held until the time of his death.

JOHN TURNER MULLIN

Dr. John Mullin, one of the oldest practitioners in Central Ontario, died at his late residence in Brampton, August 14th, aged 80. He graduated, M.D., from Victoria University in 1857. After graduating he commenced practice in the County of Peel. In addition to the practice of his profession, he took an interest in local politics, and was at one time Mayor of Brampton. He was Medical Health Officer of that town for many years, which position he held at the time of his death.

Dr. Charles Jewitt, Professor of Obstetrics and Gynecology in Long Island College Hospital, died at his home in Brooklyn, August 5th, of apoplexy, aged 76.

Book Reviews.

DISEASES OF THE SKIN. A Manual for Students and Practitioners. By Alfred Schalek, M.D., Professor of Dermatology, University of Nebraska; formerly Assistant Professor of Dermatology, Rush Medical College; Member of the American Dermatological Association; Consulting Dermatologist to the Child Saving Institute. Illustrated with 47 engravings. Lea & Febiger, Philadelphia and New York.

The second edition of this handbook has been thoroughly revised, and contains in a concise form the recent advances in the pathology and therapeutics of diseases of the skin. The X-ray and carbonic acid freezing methods of treatment are taken up as far as the scope of the work admits. It is to be regretted, however, that radium-therapy has been neglected. The matter is arranged in a readily accessible manner, and the book contains several excellent photographs from the author's own collection.

CONGENITAL DISLOCATION OF THE HIP. By J. Jackson Clarke, M.B., Lond., F.R.C.S.; Senior Surgeon to the Hampstead and Northwest London Hospital, and Surgeon to the Royal National Orthopedic Hospital. London: Balliere, Tindall & Cox. 1910.

In this small volume of less than one hundred pages, the author discusses the "bloodless," or as he prefers to call it, the "manipulative" method of Lorenz, in the treatment of congenital dislocations of the hip-joint. The technique and after-treatment are described in detail and leave nothing to be desired. There is also introduced an open operation devised by the author for cases which fail to respond to manipulative means. The book contains some good photographs and skiagraphs, and will well repay a careful study both by the general practitioner and the orthopædic surgeon.

DISEASES OF THE HEART AND AORTA. By Arthur Douglass Hirschfelder, M.D., Associate in Medicine, Johns Hopkins University. With an introductory note by Lewellys F. Barker, M.D., LL.D., Professor of Medicine, Johns Hopkins University. 329 illustrations by the author. Philadelphia and London: J. B. Lippincott Company.

In this work Dr. Hirschfelder has given to the profession on this continent a worthy successor to the books on cardiac diseases which have appeared in recent years in Germany and England. While not claiming to open up any new field as Mackenzie did, yet the author has been singularly successful in extracting the good out of all the vast amount of literature on the subject and arranging it in such a form that the reader, be he practitioner or student, can easily find the most recent work on the physiology, pathology, diagnosis and treatment of this important and interesting branch of internal medicine.

The section dealing with the treatment of failure of the heart is especially to be recommended. It is plain that the author is not a "therapeutic nihilist," but believes in the scientific use of his pharmacopœia. Histories of cases as studied by him in the wards of Johns Hopkins Hospital are freely introduced to emphasize his point. To each section is appended an extensive bibliography for those who wish to pursue their studies further afield. The plates are the author's own and not the stereotyped illustrations which one sees so commonly. The book is well bound, and altogether can be thoroughly recommended as a valuable addition to one's library.

DISEASES OF THE COLON AND THEIR SURGICAL TREATMENT.

(Founded on the Jacksonian Essay for 1909.) By P. Lockhart Mummery, F.R.C.S. (Eng.), B.A., M.B., B.C. (Cantab.); Jacksonian Prizeman and late Hunterian Professor, Royal College of Surgeons; Senior Assistant Surgeon, St. Mark's Hospital for Cancer, Fistula and other Diseases of the Rectum; and Senior Surgeon to Out-Patients, the Queen's Hospital for Children, London. Illustrated by colored and other plates and numerous figures in the text, many of which are reproduced from the author's sketches. Bristol: John Wright & Sons, Ltd. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. 1910.

This book has its nucleus in the Jacksonian Essay of the Royal College of Surgeons, 1909, and contains abundant evidence of the thoroughness with which the author has investigated his subject. It is a fact, as Mr. Mummery says, that owing probably to modern methods of living, diseases of the colon are becoming more frequent, and therefore the modern practitioner would do well to become more familiar with this field. The chapter on "Methods of Diagnosis" is particularly good, as also is the one

on "Chronic Constipation." The closing chapters deal with the various surgical procedures directed to the colon. The book is well arranged and contains some good plates.

INTERNATIONAL CLINICS. A quarterly of illustrated clinical lectures and especially prepared original articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynæcology, Orthopædics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene, and other topics of interest to students and practitioners. By leading members of the medical profession throughout the world. Edited by Henry W. Cattell, A.M., M.D., Philadelphia, U.S.A., with the collaboration of Wm. Osler, M.D., Oxford; John H. Musser, M.D., Philadelphia; A. McPhedran, Toronto; Frank Billings, Chicago; Chas. H. Mayo, Rochester; Thos. H. Rotch, Boston; John G. Clark, Philadelphia; James J. Walsh, New York; J. W. Ballantyne, Edinburgh; John Harold, London, and Richard Krtez, Vienna. With regular correspondents in Montreal, London, Paris, Berlin, Vienna, Leipsic, Brussels and Carlsbad. Volume II. Twentieth Series. 1910. Philadelphia and London: J. B. Lippincott Company, 1910.

The second volume of International Clinics for 1910 contains a well-arranged collection of papers, any one of which will be of profit and interest to the practitioner who wishes to while away a half-hour. To mention a few, Professor Tyson, of the University of Pennsylvania, has an interesting paper on "The Treatment of Cardiovascular Disease," while his colleague, Dr. Allgu, contributes one on "Dropsy and Its Treatment." Of a lighter vein is the article by Dr. Austin, of Philadelphia, "The Book-Plates of Physicians," which will be of great interest to all who take a delight in the intellectual side of their vocation. The article is well illustrated, and will no doubt stimulate many of its readers to follow Professor Osler's advice and ride a hobby.

NEW EDITION OF GRAY'S ANATOMY.

A man may be a great anatomist or a great teacher, but when one man combines these two faculties his single mind, by its complete co-operation, can produce a teaching book in which matter and method blend into a result obtainable in no other way. This double-sided genius was possessed by Henry Gray, and until nature grants to one individual like endowments, his work will stand. Owing to the incessant activity in all branches of medicine, books in any of its departments are almost invari-

ably short-lived. The single exception to this rule is Gray's Anatomy. In the fifty years since the author's early death it has grown beyond even the leadership in its own subject, and has become the foremost medical book in all English literature. As English is now the world-language, this is equivalent to primacy in the medical literature of the world.

Eighteen editions have been demanded in the course of its half century, and they have enlisted many of the ablest anatomists of this period. The principles on which Gray built his book have been followed, and it is not too much to say that during two generations it has guided the teaching of its subject in America as well as England. An army of students has conned its pages, and has carried it away into practice, for it is equally valuable to the physician and surgeon for reference on underlying points. In fact, the editor has made the applications of anatomy, in medicine as well as surgery, a special feature.

Of all the editions, this new one represents the most thorough revision. Every line has been scanned for possible improvement. Anything in the nature of a possible obscurity has been clarified, passages have been rewritten, and new developments have been incorporated. Rearrangement has eliminated many duplications, and this, together with condensation in style, has rendered it possible to present more information in one hundred pages less space, to the reader's obvious advantage. Professor Spitzka, the editor, is one of the foremost anatomists in the world, and he joins to this the apt qualification of being himself an artist as well, so that the drawings from his own hand present his knowledge directly to the mind of the reader. Another of Gray's fundamental improvements, in which his book has always been unique, was the engraving of the names of the parts directly on them, so that the student learned at once not only their nomenclature, but also their position, extent and relations, the four cardinal points. The advantage of this graphic method over the elsewhere customary lines and reference letters is obvious. Gray's book was also the first to contain illustrations in colors. In this new edition, besides all the improvements in the text, the splendid series of characteristic illustrations has been equally revised, many cuts being replaced and more added, and the use of colors is more lavish than ever. No student in any profession, or in any branch of medicine, has offered to him any instrument of instruction comparable to Gray's Anatomy. It suffices to say that the new edition will excel any of its predecessors.

Selections.

How and When Shall Drugs be Administered?

This is a question of vital importance, as even if the diagnosis is correct, the indication for a drug positive, and the selection of the drug needed accurate, all is of no avail if the drug is administered in an insoluble preparation, at a wrong time to accomplish the object aimed at, or in a frequency that is either useless on the one hand or dangerous on the other. To be more explicit, it lacks physiologic and therapeutic sense to administer a drug, that is quickly absorbed and quickly eliminated, when a continuous action is desired, so infrequently that there is only momentary, intermittent effect. On the other hand, it is futile to administer a drug for immediate need that requires hours to act. It is certainly physiologically wrong to administer a drug frequently that requires hours, or even a day or two to be excreted.

The greatest number of mistakes in medication are made in the treatment of inflammations and diseases of the stomach, and in disturbances of the digestion. If simple gastritis is diagnosed, and it is decided to treat it with bismuth, how futile to expect that a few grains given immediately before meals (or, we are sorry to say, often immediately after meals) could do any good in ameliorating the irritation of the stomach mucous membrane. For bismuth to aid in healing this membrane, it must be spread well over it when the stomach is empty. Also, it is well to wash off the mucus which must of necessity form on any inflamed mucous membrane. Bismuth for this purpose should be given an hour before a meal, in a dose of 2.0 or 3.0 grams (30 or 45 grains), taken with a not too large amount of water, and such administration should be preceded a half hour before by a large draught of hot water, with or without a little salt, and perhaps a small amount of bicarbonate of sodium to wash off the mucus and prepare the membrane for the bismuth treatment. Such treatment once a day, combined with a diet regulated to cause the least irritation and the proper treatment of coincident constipation, will readily heal simple gastritis. This same treatment is a valuable aid in healing an ulcer of the stomach.

If it is deemed advisable to administer nitrate of silver, how useless, in the first place, to order it in such a form that it will

be oxidized before it is taken by the patient, and how useless to give it after a meal. Also, what lack of good sense is displayed when a nitrate of silver treatment is given two or three times a day. How many would touch a canker sore, or other surface inflammation, with nitrate of silver three times a day, or twice a day, or even once a day? A nitrate of silver treatment for ulcer of the stomach or duodenum may be tried once a day, or once in two days, for a few days, but never for any length of time, and then it is best to have the dose of nitrate of silver combined with some inert earth, in capsule, and the capsule uncapped at the moment of swallowing and taken into the empty stomach with a suitable amount of hot water. This will insure, as near as it is possible, an application of the nitrate of silver to the ulcer.

The value of digestants as generally administered is open to much question. A small amount of pepsin, given after an ordinary meal, is probably of but little value. The value of dilute hydrochloric acid after meals, when the stomach needs it, is proved, and frequently when pepsin is administered it is combined with hydrochloric acid, and it is likely that the hydrochloric acid does the work. A combination of pepsin with bicarbonate of sodium, as often seen, is of course absurd. The coincident administration of pancreatin and pepsin seems unworthy of serious consideration. The pancreatin will not act in acid media, and its activity will doubtless be entirely destroyed before it reaches the intestine. Sometimes it may be advisable to administer bicarbonate of sodium before meals. At this time it may do two things. It may cause the contents of the stomach to be alkaline or neutral longer than without it, thus aiding the starch digestion due to the saliva. If, however, it is in the stomach many minutes before the meal, it would probably quickly stimulate an outpouring of hydrochloric acid to neutralize it. After meals it would doubtless prolong the starch digestion, and temporarily, at least, inhibit the protein digestion. For heartburn or pyrosis occurring several hours after a meal, the bicarbonate of sodium is certainly valuable symptomatic treatment to counteract the hyperacidity. Such acidity, however, is often due to lactic acid and not to hydrochloric acid. Such treatment is purely symptomatic, and the repeated administration of soda is inadvisable, and the cause of the condition should be removed, if possible.

A large number of drugs, especially alkaloids, even bitters, and alcoholic preparations in any amount, will inhibit the digestion more or less. In ordinary doses, however, the inhibition is

probably but slight, and any drug or preparation that is irritant to the stomach should certainly be administered either directly, or within an hour, after meals. Even bland, non-irritating tablets, pills, and capsules should generally be administered after a meal, or at least with a large draught of water, and the tablets should be crushed before swallowing. Potassium chlorate tablets should not be dissolved in the mouth, as the concentrated saliva containing this solution, when swallowed, is irritant to the stomach and may cause inflammation and even ulceration. Certainly such tablets should never be swallowed into the stomach, and there is no logical or rational reason for ever administering potassium chlorate internally. Bromid tablets, salicylic acid or its salts in tablets, tablets containing ammonium chlorid, and in fact most tablets may cause irritation of the part of the mucous membrane on which they dissolve, if swallowed into the empty stomach, and most of the above-named tablets should be pre-dissolved, or certainly crushed before taking into the stomach at any time. Quinine pills or tablets should never be taken on an empty stomach. If in any dose other than a small tonic one, quinine will slow peptic digestion. Consequently, if large doses are administered, it is well to give them between meals, swallowed with a few ounces, more or less, of milk or other simple, easily digestible food. If a patient does not sleep well, or does not get to sleep readily at night, the possibility of a tonic capsule or pill of quinine, or quinine and strychnine, or strychnine, given after the evening meal being the cause of it should be considered, and the evening dose omitted. Also, many a patient is given hypnotics for insomnia, when the omission of the evening tea or coffee will allow normal sleep. It is physiologically wrong to give hypnotic to a patient who is ill when he is being hyperstimulated by strychnine throughout the afternoon and evening.

For medication of the bowels with bismuth, large doses, or perhaps better, frequent doses, are always needed, as doses unless very large, given at long distances apart, are likely to pass along with the food and not medicate the bowel mucous membrane at all. It is useless to expect that bismuth administered by the mouth will heal or medicate the mucous membrane of the colon.

If morphine must be administered and the patient is taking nutriment, if possible, it should not be given within one or two hours after a meal, as the digestion will certainly be inhibited.

When cathartics are necessary, it is generally well understood which act rapidly and which slowly, which are to be given

at bedtime or, better even, often at suppertime for action the next morning, and which given before breakfast for immediate action. However, many combinations are made which combine quickly acting cathartics with slowly acting cathartics. Such combinations are certainly a mistake. Aloin, cascara, podophyllin, euonymus, sulphur, calomel and rhubarb all generally act slowly, taking anywhere from 6 to 12 hours. The salines and the drastic cathartics generally act in from 2 to 4 hours. Senna may act in from 4 to 6 hours. Of course the size of the dose has a great deal to do with the rapidity of action, but the above is approximate.

It has been supposed for some time that the experiments were conclusive that saline purgatives acted by the fact that they were very slowly absorbed and caused an exudate of water into the intestine so that the fluid in the intestines and the fluid in the blood vessels would become isotonic, and that this mechanical fact, *viz.*, the water with increased peristalsis, was the cause of the large watery stools from salines. Clinically, it has also been noted that salines act better when the patient is up and about than when he is in bed and at rest. This has again seemed to prove that gravity had a great deal to do with the rapidity of the saline catharsis. Lately, however, Dr. Arthur F. Hertz, Assistant Physician at Guy's Hospital, London (*Guy's Hospital Reports*, Vol. LXIII) has shown, by administering bismuth preparations at various periods of digestion and taking X-ray pictures of the abdomen at different periods of digestion, that salines are really absorbed from the stomach and upper bowel and probably re-excreted into the lower intestine. Hertz, in co-operation with F. Cook and E. G. Schlesinger, has shown that when food is taken into the stomach it reaches the cæcum in about four hours. A saline aperient, on the other hand, may cause an action of the bowels in some instances in even half an hour, and often within two hours. Insoluble bismuth being administered with a meal will show, by radiographs, the exact length of time in which food passes down through the different parts of the intestine. A seidlitz powder or its equivalent, taken at the time of the bismuth, or with the bismuth and food, and then radiographs taken, shows that the movement of the bowels comes long before the bismuth and food reach the cæcum and colon. The excess of water excreted, therefore, with such movements cannot come from the small intestine, as otherwise it would wash the meal and the bismuth down with it, but really must be excreted into the lower gut. Saline purgatives also seem to cause no increased acceleration of the passage of

the food from the stomach to the cæcum. These investigations seem to show clinically that when it is desired to empty the colon and not act on the small intestine, salines are indicated, but when it is desired to cause stimulation for excretion or for increased peristalsis or for drainage of the upper intestine, other cathartics than salines are indicated.

Dr. William Brady, of Elmira, N.Y., (*New York Medical Journal*, Jan. 29, 1910) writes a most instructive article on the administration of drugs. He emphasizes the necessity of knowing the length of time before a drug is absorbed and about the length of time in which it will be eliminated.

Probably in no branch of medicinal therapeutics are more mistakes made than in the treatment of cardiac and circulatory weakness. Brady shows how really futile it is to expect active aid from digitalis in any acute heart weakness, and yet digitalin is constantly used hypodermatically for this purpose. Much of the digitalin on the market is unreliable, and while it is less irritant when used hypodermatically than the liquid preparations of digitalis, it has not been proved that it is any more effectual as a cardiac tonic than a sufficient dose of a liquid preparation of the whole drug. If the cardiac drugs are separated into cardiac stimulants and cardiac tonics (the stimulants acting quickly, but such action not lasting any length of time; the tonics acting slowly, but projecting their activities for a considerable length of time) one will not make mistakes in their use. The cardiac stimulants are ammonia, camphor, strychnine, atropine, suprarenal and pituitary preparations properly used, and in some instances where only a quickly acting and not lasting stimulation is required, alcohol. The cardiac and circulatory tonics are digitalis, strophanthus, caffein, and ergot used hypodermatically. Caffein and strychnine are really stimulo-tonics, both acting rather quickly and having their effects last a considerable length of time. In certain conditions when the heart is failing and the blood-pressure high, nitroglycerine and nitrites will relieve the heart and improve the whole character of the circulation. While nitrites act quickly and such action is theoretically and laboratorily quickly over, if given three or four times a day they will positively project, in most instances, a lowering of the blood pressure over the whole twenty-four hours.

Brady repudiates the so-called Da Costa (nitroglycerine compound) tablet containing digitalis, strophanthus, belladonna, and nitroglycerin, as combining drugs which act quickly with

those which act slowly. His criticism is just. At the same time, the nitroglycerine of the second and third dose will doubtless prevent some of the vasomotor contraction of the first dose of digitalis. Consequently, the combined treatment, whether given in one tablet or in separate preparation, is often not bad therapy. Theoretically and practically a little more careful discrimination of the needs of each patient will develop a method of drug administration that will be satisfactory and yet will not require such combination, viz., if the patient needs nitroglycerine, he probably does not need digitalis. On the other hand, if he needs digitalis, and it is inadvisable to contract the blood vessels, a small dose of digitalis may give satisfactory action, and nitroglycerine will not be needed.

Brady emphasizes the well-known but often disregarded fact that oils inhibit digestion by diminishing the secretion of hydrochloric acid. Consequently, if it is advisable to give a patient olive oil or cod-liver oil (and, as urged by Brady, pure, clean cod-liver oil acts just as well as and often better than any emulsion), theoretically it should be given two hours after a meal, at about the time when the stomach will completely evacuate its contents into the duodenum. This is theory, and perhaps physiologically correct. Practically, it is very disagreeable for a patient to take oil two hours after meals, even if he were so daily situated as to be able to do so. Also, the contents of the stomach do not all pour, at one stated time, into the duodenum, but more or less frequently during the process of gastric digestion certain amounts are passed into the duodenum, and the oil might be passed into the intestine long before the gastric digestion was completed.

Brady states that hexamethylenamina is eliminated into the cerebrospinal fluid in one-half hour after its administration, and this, he states, in sufficient amounts to inhibit staphylococcus growth. So far as we know, hexamethylenamina is harmless when administered in any ordinary amounts for most any length of time; consequently, the drug seems indicated whenever meningitis is present or is likely to develop. This drug is also eliminated and acts satisfactorily in inflammations of the gall-bladder and in inflammations of the urinary tract, especially of the pelvis of the kidney. It would seem advisable to administer it in typhoid fever to prevent localizations of the typhoid bacillus in parts of the body other than the intestine.

As Brady emphasizes, it should not be forgotten that the iodids are absorbed rapidly and are eliminated rapidly, unless

they have been given for a long time, when it may take several days for the excess of iodid to be completely eliminated. Bromids, on the other hand, are absorbed rather slowly, and are eliminated very slowly, and if taken for a long time, may not be completely eliminated for weeks.

Phenolphthalein is very slowly absorbed and acts very slowly, and is best given as a tablet, which should be thoroughly masticated before swallowing. Sometimes this drug, even in small doses, causes a great deal of irritation of the bowels.—*Jour. A. M. Assn.*

Dietetic Restrictions in Cardiac Affections

Current views as to what constitute the most suitable diet for patients suffering from heart disease have undergone considerable modification of late. They are allowed much more latitude provided they conform to certain restrictions and modify their habits of life. While, on the one hand, they must avoid overloading the stomach, since this throws additional burden on the damaged organ, they may be allowed to eat according to their requirements.

Apart from the fact that laborious digestion is a frequent cause of palpitation and shortness of breath, an excess of food is to be deprecated, if only because, in persons whose physical activity is necessarily reduced, it tends to cause obesity, which further aggravates the strain on the heart and paves the way to fatty degeneration.

It follows that patients with any form of cardiopathy require a diet which, while nutritious, is of comparatively small bulk, and admits of easy digestion. They must consequently avoid bulky green vegetables, soups and much fluid with meals, since these distend the stomach and so mechanically impede the heart's action. For similar reasons, they should avoid preserved or twice-cooked meat, high game, pork, meat pies, sausages, and the like. Farinaceous articles, too, must only be taken in moderation on account of their fattening tendency. Their diet, in short, should consist mainly of red meats, either roast or grilled, poultry and fish, especially trout, young salmon, soles and turbot, and the tenderer kinds of fresh water fish. To these may be added cooked green vegetables, green peas, eggs, fresh cheese,

Surgery is meddlesome therapy in the vast majority of cases of acute hæmorrhage from gastric ulcer.—*Amer. Jour. of Surg.*

and fruit. All farinaceous articles should be taken in the form of *purées* duly passed through the colander.

In presence of threatening asystole, a strict milk diet may be necessary for a few days, and should there be excessive acidity, the milk may be diluted with Vichy or Vals water, or a table-spoonful of lime water may be added to each pint thereof.

In the absence of albuminuria, cardiac patients do best on a spare mixed diet. Potain has pointed out that milk diet is of no benefit in cardiac neuroses, in the palpitation of hysterical subjects in Graves' disease, and, speaking generally, in all states which come under the designation of pseudo-cardiopathy.

Constipation has to be carefully guarded against and remedied when present, since it entails flatulence, which is a potent source of cardiac distress.

Alcoholic beverages must only be taken in extreme moderation, and if wine be taken it must be freely diluted. Alcohol makes for fatty degeneration of the heart, and exerts a disturbing influence on cardiac innervation. Tobacco, again, is a powerful heart poison, and its action is more marked in cardiac subjects than in normal healthy persons. It follows that the former should relinquish the tobacco habit, and should avoid remaining in rooms the atmosphere of which is laden with tobacco smoke.

Flatulent dyspepsia and heart disease react on each other—in fact, they create a vicious circle. We must, therefore, devote attention to preventing gastro-intestinal fermentation, and this is best accomplished by getting the patient to take lactic ferment, preferably in the form of Lactobacilline tablets, with his meals, two or three times a day along with sweetmeats of some kind—sugar, jam, dates, etc. This treatment is specially valuable in cases of functional heart trouble, since these are markedly exaggerated by concomitant digestive disturbances.—*Journal of Practical Dietetics*.

Dupuytren's Contraction

While we are dealing with the hand, I wish to show you this man as an example of the treatment of Dupuytren's contraction of the palmar fascia. As people advance in years, one of the sclerotic changes which appears is Dupuytren's contraction. I have lectured on this subject here previously, and I will now merely say it is a fibroid thickening of the palmar fascia, which gradually undergoes cicatrization, and draws the fingers into

the palm. Here is an example of a man who had both hands affected. He is a painter, and was unable to do his work satisfactorily. I have made many attempts to cure Dupuytren's contraction, and at last I think I have found a method which is generally successful. The method formerly in use was multiple subcutaneous puncture and division of the bands. Experience showed that the condition often came back in a year or two, and the patients were then as badly off as before. So in all cases, except those who are broken down in health, I make an incision in the palm of the hand and dissect out all the affected fascia. You can easily tell which is affected and which is not, for the contracted part is always dead white in color, whereas the non-affected is of a pearly lustre. Having dissected out the diseased tissue, fibrolysin is rubbed in very freely, and a few drops are injected with a syringe around the margins of the wound. Then the wound is sutured, and healing follows in about eight days. This man was incapable of extending his fingers. The palm is now fairly supple, and his movements are free. So far I have not seen a relapse in any of the cases so treated, and I have been carrying out this method for a couple of years. In patients who are younger than this man, and not exposed to lead, the results are very satisfactory. A little thickening returned in this case after the operation, and so, four days ago, I injected 5 m. of fibrolysin into the palm of the hand just to the side of the scar, and the thickening is already beginning to disappear. So that a combination of the open operation and the judicious use of fibrolysin will enable us to render these hands useful, and effect a permanent cure.—A. H. TUBBY, in *Medical Press and Circular*.

Non-Specific Urethritis

Joseph Hume, New Orleans (*Journal A. M. A.*, May 21), says that there are two types at least of non-specific urethritis: 1, acute in character, following sexual congress after a regular incubation period, running a well-marked clinical course, and favorably influenced and easily cured by proper treatment; the other chronic from the beginning, sometimes following exposure like the other, but with an irregular incubation period, with urethral lesions which from their pathological picture must have taken months or years to develop, and showing no tendency toward self-limitation, being resistant to treatment and sometimes incurable. The former class he calls cohabitative, sexual or in-

fective urethritis; the latter autoinfective or autogenous, both forms being non-specific. The former class is comparatively infrequent, and has a tendency to a slightly longer incubation period than true gonorrhœa, the infection being milder in character. A case is reported. In 11 cases the infecting organism was studied. In five cases Gram-positive cocci alone were noted; in five cases bacilli alone were found, 4 Gram-positive, 1 Gram-negative, the latter being the colon bacillus. The other has not been recognized by name. In one case the staphylococcus was also present. The other form is probably not often observed until some suspicion arises, and then it is found to be not new at all. It is frequent in medical students, as has been observed by Waelsch. Hume seems to consider a long foreskin as an etiologic factor in these conditions, as rendering the urethra less resistant to infective organisms. The prognosis of this autoinfective type is not so favorable. There is often a well-developed localized fibrosis in the urethra and the prostate is often infected. It is best treated by circumcision, the prostatic massage followed by intravesical irrigation and hot rectal douches if the prostate is involved. In many of the cases the patients are made neurasthenic without recognizing the cause. The pre-existence of such conditions naturally influences the course of true gonorrhœal infections and may account for the perniciousness of some first cases. Cases of this kind are also reported, and tabulated statements showing the contrasted clinical pictures of the two forms are given. Many of them are not of a sexual origin and will explain the origin of many cases of obscure prostatic or vesicular infection. The practice of circumcision should be encouraged as a means of preventing autogenous urethral non-specific infection.

Intravenous Anesthesia with Ether or Chloroform

Although it has been demonstrated, apparently to the satisfaction of the profession, that the major dangers incident to the use of ether are dependent upon lack of skill in the giving of the agent rather than upon toxic properties inherent in it, the search for new methods is not likely to cease, since, even when conducted with the utmost care, inhalation anesthesia leaves much to be desired. Under some certain circumstances it is distinctly contraindicated, under others it is difficult to maintain. The scopolamine-morphine after a brief trial has been properly relegated for use in exceptional cases because of its greater mortality. The same may be said of the various

methods of accomplishing anesthesia by spinal injections. One of the most radical procedures recently proposed is that of intravenous injections of ether and chloroform.

Burkhardt, after a series of experiments on animals, noted that a safe anesthesia was practicable. At least that must have been his conviction, since he did not hesitate to apply the method to the human, using first chloroform, and being deterred from further line of experimentation by hemoglobinuria. Ether was apparently much safer. He employed a 5 per cent. solution in physiological salt solution. The warm mixture was injected into the median basilic vein with some rapidity, the flow being stopped when the patient became unconscious and relaxed, and resumed as soon as there were signs of a return of consciousness and reflexes. Over thirty patients were thus treated without accident, in some instances the anesthesia being continued for over an hour. In nearly all instances the patient received a preliminary injection of scopolamine and morphine. The quantity of the solution required varied greatly, and was given at between one-third of a liter and two and a half liters. It is particularly noticed that there were no changes in the urine after this method of anesthesia, no headache, no irritation of the lungs or circulatory perturbations. It was noted that when the strength of the solution was increased to 7 per cent. hemoglobinuria resulted. The author modestly remarks that the time consumed in freeing the median basilic vein and securing therein a cannula is likely to bar this method from general use, but that it is likely to be highly serviceable under some circumstances, and it is the safest and pleasantest of all methods of anesthesia. He particularly commends it when there are respiratory or circulatory difficulties which would add to the danger of inhalation anesthesia.—*Therapeutic Gazette*.

The Treatment of Typhoid Carrier Cases

In the *Journal of the Royal Army Medical Corps*, Cummins writes on this topic and summarizes the results of treatment as follows:

1. Lactic acid bacilli have failed to diminish the excretion of bacilli in fecal cases.
2. Attempts to cure typhoid bacilluria by acidifying the urine have not been successful.
3. The administration of antiseptics invariably brought about a decided diminution in the number of bacilli excreted.

both by fecal and urinary carriers. This effect is much more marked when the maximum "contact" of antiseptic with bacilli is brought about by combining the treatment with low diet and aperients in the case of "fecal" and diuretics in the case of "urinary" carriers.

4. The use of X-rays, especially in cases with gall-bladder symptoms, seems to have a definite beneficial result. The author speaks with diffidence, as his experience is limited to one such case; and it must be remembered that its history shows a long intermission in the passage of typhoid bacilli, a few months before the X-ray treatment was tried.

But the disappearance of bacilli from the stools on two occasions following the use of X-rays, and freedom from recurrence for considerable periods after the cessation of the treatment suggest that the case was really benefited by the X-rays; while the charts of the other two cases also point to improvement under this treatment.

5. Lastly, it seems possible that treatment by a vaccine, though unsuccessful when tried alone in the cases now under discussion, would have a better chance if combined, in the case of urinary carriers with diuretics, and in gall-bladder cases with X-ray treatment.

As has often been pointed out by Sir Almroth Wright, a vaccine is more likely to be efficient when the local conditions are so altered as to permit of the fullest possible contact between the bacteriotropic substances in the blood and the bacteria involved.—*Therapeutic Gazette*.

Club-foot in Infancy, Treatment of

It has been recognized that the crux of the problem of dealing with congenital club-foot lies in securing a satisfactory forcible overcorrection of the deformity. The technic of retention in this overcorrected position by means of plaster of Paris has also been perfected. The author lays stress on the fact, however, that mere retention in this position will not bring about a permanent cure. The most potent factor at our command for the cure of club-foot is the influence of weight-bearing upon the foot held in an overcorrected position. Since this factor is not available until the tenth to the twelfth month, it is unnecessary, the author contends, to maintain overcorrection by means of plaster of Paris until a period shortly before this. On account of the greater size of the foot, both the overcorrection and the retention

dressings are more satisfactorily made at this time than in the first few months of life. Because of the greater age of the child, the correction as above suggested is much less objectionable to the parents. The period elapsing until the time for forcible correction has arrived is not to be spent inactively, however, but is to be utilized for increasing the flexibility of the foot by manipulations, accomplishing a partial correction of the varus by means of a splint. The daily removal of the splint gives opportunity both for massage of the limb and active muscular effort on the part of the child. It is believed that by this means the residual atrophy of the leg muscles is held to a minimum. The whole period of treatment under this plan is not longer than under the older plan. One anesthesia will, as a rule, suffice, whereas, under the older plan, several such administrations were usually required.

Tenotomy of the tendo Achillis for the correction of equinus should on no account be made until the other elements of the deformity have been disposed of. The equinus can be easily corrected at any time by tenotomy and proper after-treatment. The constant pull of the tendon upon the heel favors the development of the posterior process of the os calcis; early tenotomy does the reverse. It is also of great advantage as a counter-pull in making the overcorrection of the varus deformity. The equinus element may therefore be ignored in the infantile club-foot until the time for the final correction under anesthesia.—A. H. Freiberg, in *Ohio State Medical Journal*.

Auto-Serumtherapy in Pleural Effusion

Dodal (*Wien. med. Woch.*) has treated 17 cases in a Vienna military hospital by the method introduced in 1907 by Gilbert of Geneva and Fede of Naples. One c.cm. of a pleural effusion is withdrawn by a hypodermic syringe and immediately injected under the skin of the back. This procedure is repeated as often as required, though a single injection may suffice. It is usually followed by diuresis and rapid absorption of the fluid, whether serous or hæmorrhagic. The method has been tried extensively in Senator's wards in Berlin. The cases treated included examples of sero-fibrinous, hæmorrhagic, and incipient purulent pleural effusions, ascites, hydrothorax, ascites with hydrothorax, and hydrothorax with both ascites and pericarditis. The conclusions arrived at were that the treatment was usually useless in ascites and hydrothorax, only two cases of which improved. But

in all but one of 15 cases of serofibrinous and hæmorrhagic pleural effusion the results were excellent. Not only was absorption accelerated, but the tendency to the formation of adhesions was diminished. Pyrexia was found not to be a contraindication. Zimmermann, of Dorpat, likewise obtained satisfactory results. Dodal employed the following technique: After thorough disinfection of the patient's skin and the practitioner's hands, the boiled needle of an exploring syringe is inserted in an intercostal space. After 4 c.cm. or 5 c.cm. of fluid have been withdrawn the needle is moved until the point is in the subcutaneous cellular tissue. It is then pushed forwards under the skin, and 2 c.cm. of the pleural fluid are injected. The needle is then withdrawn and the puncture closed with gauze and strapping. The remaining fluid in the syringe is used for microscopical investigation. As the majority of the Vienna cases were tuberculous, a complete cure was obtained in only four, but the writer regards the results as entirely satisfactory and occasionally excellent. No unpleasant complications were observed, with the exception of an acute eruption in one case after a second injection was given. This was possibly due to anaphylaxis. Auto-serotherapy is more valuable in acute than in chronic pleurisy. In tuberculous cases a rise of temperature follows the injections. The mode of action is uncertain, but the injection of pleural fluid probably stimulates the formation of specific antibodies.—*British Medical Journal*.

Alcohol, Action of, Upon the Human System

In health alcohol in moderation may be useful, but its continuous use is to be avoided, and it must be borne in mind that a certain idiosyncrasy may exist; in diseased conditions alcohol is, in many cases, of great value as a therapeutic agent of a temporary nature, always provided that it is used with discretion and its effects watched. Taken in excess or in smaller quantities over long periods of time, alcohol is extremely deleterious to the human system, so much so in fact that in many instances it has induced physicians to discontinue its use as a drug on the grounds that its disadvantages outweigh its advantages.—H. A. Haig, in *Practitioner*.

Beck's Bismuth-Vaseline Paste Injections in Chronic Tuberculous Sinuses

Shober (*Ann. of Surg.*, May, 1910) reports five cases treated by him by this method, introduced by Beck, of Chicago, in 1908.

In order to diagnose the extent of chronic tuberculous sinuses Beck injected a number of cases with a paste composed of 1 part bismuth and 2 parts vaseline, and then had radiographs made. The first case so treated led to the important discovery that the bismuth paste injection has a marked curative effect, apart from its diagnostic value. In his paper read before the International Congress on Tuberculosis, Beck reported 192 cases treated by this method; of these, 64 per cent. were healed, 28.5 per cent. improved, 6 per cent. unchanged, while 1.5 per cent. died during the treatment or after. The method was employed in cases of osteomyelitis of long bones with sinuses, empyema, and tuberculous lung abscesses, suppurative sinuses of the head, sinuses following tuberculous glands, rectal fistulae, and tuberculosis of the kidney with sinuses. Shober employed this method in June, 1908, in the case of a woman of 35 suffering from a psoas abscess sinus, which had persisted since 1902. He had removed a tuberculous kidney from this patient in October, 1907, and the pelvic organs in December, 1907. Treatment commenced in June, 1908. Between June 25th and October 24th she had twelve injections. From the first injection the discharge changed from a characteristic irritating pus to a mild, thin, muco-purulent discharge, which rapidly grew less in quantity. At first he was able to inject about 3 drachms of the paste, finally only 30 to 40 minims; on September 24th the sinus closed completely, and has remained so to date. A similar case of psoas abscess sinus of three years' standing closed after the fifth injection. He has also treated two cases of tuberculous hip and a large sacral abscess with similarly good results. The technique is very simple. The paste consists of bismuth subnitrate 33 per cent., and vaseline 67 per cent. The bismuth should be slowly stirred into the vaseline while hot, but not boiling. When cool, this forms a thick, soft paste, which before using should be heated and thoroughly stirred until thin enough to be drawn into a suitable syringe. Care should be taken that no water enters the sinus, the orifice of which should be washed with 95 per cent. alcohol. The nozzle of the syringe should be placed firmly against the opening; the paste is forced in under moderate pressure until the patient begins to complain. A pledget of gauze is then placed against the opening, and an icebag applied for a short time. No anaesthetic is required, as the injections are usually painless. Beck believes that the action of bismuth subnitrate is bactericidal, chemotactic, and astringent. A systematic examination of the discharges from suppurating sinuses under treatment invariably shows a continuous decrease in the

number of organisms, and in many cases their final disappearance. He also believes that the mechanical action of the paste is a prominent factor in the healing process; the diseased walls are separated and brought into contact with a substance in itself bactericidal and stimulating. This method is obviously not applicable to biliary or pancreatic fistulæ or sinuses communicating with the cranial cavity or hollow viscera. There are cases in which the bismuth plug may produce unpleasant symptoms by pressure on vital organs, and, in cases where the disease has affected large veins in the neighborhood of the sinus, the entry of the bismuth into the circulation might cause serious consequences. In a few instances toxic symptoms have been observed, but up to 100 grams of the 33 per cent. paste may be injected without fear. Beck states that the formation of sinuses and fistulæ may be prevented by opening cold abscesses, evacuating the contents, and at once injecting not more than 300 grains of 10 per cent. bismuth paste. The opening should not be sealed. This method is applicable to suppurative accessory sinuses of the head, while of value in all suppurating sinuses and cavities the injections are particularly effective in tuberculous cases.—*British Medical Journal*.

Surgical Hints

As recommended by Sir William Bennett, no examination of a case of pain in the groin can be effective unless it is made in the erect as well as in the horizontal position of the patient.

Internal urethrotomy should not be undertaken in the presence of acute urethral inflammation because of the risk of infection and the probability that the operation will fail to produce permanent results.

To stimulate intestinal peristalsis in cases of paresis of the bowel following abdominal operations, the use of eserine salicylate, 1-60 grain or more, is often exceedingly effective, particularly where there is increasing distension and intractable vomiting.

After performing internal urethrotomy it is advisable to pass sounds of the normal caliber of the urethra every other day until assured that healing of the wound has occurred. This is shown by the fact that the insertion of the sound is unattended with bleeding.—*International Journal of Surgery*.

Miscellaneous.

How to Act in Case of Fire

Perhaps no single ejaculation is capable of producing so instantaneous and so widespread an alarm as the cry of "Fire!" Nor is this surprising when we remember that the fire fiend is each year responsible for an almost incalculable loss, both of life and of property.

Yet of all emergencies, none more than an outbreak of fire imperatively demands a preservation of one's power to act with coolness and decision. Often, by prompt and well-directed action, the threatened catastrophe may be averted; the loss of property, and what is still more important, the loss of human life, may be avoided.

Fire drill nowadays has its place in the routine of every well-conducted scholastic establishment; nor can it be doubted that the capacity for prompt and intelligent action thus inculcated in the minds of young people of both sexes has, in emergency, proved the means of preventing appalling disaster. But while this capacity for combined action is very desirable, there seems to be a danger of fostering it at the expense of what one may term "fire education." Every child should be taught, by means of precept and experiment, what to do when a fire breaks out in his own house. He should be instructed how to go to work coolly and methodically, either to extinguish the flames, or—if necessary—to escape from the building. Lessons of this kind, imparted by practical methods, would become a source of strength in after life, and would go far to check the recurrence of fire outbreaks, with their entailed loss of life and capital.

Take, for example, the case of an overturned oil lamp. There is a sudden and alarming blaze; but if action is taken at once, the damage may be confined to the carpet, cloth, or what-not upon which the lamp actually lies. To throw water on the conflagration is useless. The burning oil will only be forced over a larger area. The aim should be to absorb the oil and smother the flame as much as possible, and this may best be done by means of some non-inflammable powder—such as flour, sand, earth from the garden, or anything of the kind.

Another point worth remembering is the use of the soda-water syphon as an extinguisher. Suppose that a lamp or candle has ignited a curtain and that the flame has run up the fabric. A syphon of soda water, held as shown in the accompanying

photograph, and squirted over the flames, will work wonders. Not only does the force with which the liquid leaves the tube allow of its being directed well above the operator's head, but the carbonic-acid gas with which the water is charged helps to deaden the flames.

How to act for one's safety, or to assist another, in the case of burning clothing cannot be better told than in the words of Prof. John Marshall. He says: "If the dress of a woman catches fire, she should at once lie down on the floor, and should crawl in this position either to a bell-pull or a door, and call for assistance; or she should roll herself in a rug or blanket. In the event of a man rendering help, he should at once lay the patient down, take off his coat and roll her in it, unless he can obtain a blanket or rug, or roll her on the carpet. If a woman renders assistance, she must be careful not to allow her own clothing to touch the victim, but to hold a rug or blanket in front of herself while approaching the flames."

Prompt action without rashness or self-balking hurry, is the keynote of success in fighting the fire fiend. This applies especially to those who wake from sleep to find the house on fire. Not a moment should be lost, but there should be no wild rushing from a window to a door and back again. First, an attempt should be made to get down the stairs. To escape through passages filled with suffocating smoke, tie a wet handkerchief over the mouth and nose, then crawl on the hands and knees, for the smoke tends to rise with the hot air, and will be less dense close to the floor.

But if the whole of the lower part of the house is burning, and escape by means of the stairs is impossible, preparations must be made for leaving through the window. Tie all the sheets and blankets together by means of "reef-knots," which will not slip no matter how much strain is put upon them. Then drop the bedding or mattress from the window, in order that there may be some kind of break in the event of a possible fall. Finally, make one end of your improvised fire-escape fast to the bedpost, drop the other end from the window, and after making sure that it reaches to, or almost to, the ground, go down it boldly hand over hand. It should be added that in the case of inexperienced persons, there is always considerable risk of a dangerous fall resulting from this means of exit; therefore it should be undertaken only when all other means of escape have failed.

In conclusion, a few words may be added respecting the treatment of burns and scalds prior to the arrival of a doctor.

The main point to bear in mind is that the air is to be excluded from the affected part as quickly as possible. This may be done by dredging the part thickly with flour—if the skin is not broken—and not disturbing it for some time.

Any vegetable oil—such as salad, sweet, or linseed—may be used with advantage, a rag being soaked with it and used to cover the wound. A very good application is made by mixing equal parts of linseed oil and lime water, forming “carron oil.”

Finally, it cannot be too strongly impressed that all clothing covering a burn must be removed with the utmost care. Never try to withdraw the injured limb, but cut the clothing away—in small pieces, if necessary—so that the injured surface may not be more damaged. Never hold a burn in front of the fire, according to the popular practice; this only increases the injury. Have your oil or other application ready for immediate use as soon as the clothing has been removed.—*Scientific American*.

American Serums Abroad

The Rockefeller Institute, of New York, has been presented by the Pasteur Institute of France with a replica in bronze of the bust of Louis Pasteur, in recognition of aid rendered in the recent epidemic of cerebro-spinal meningitis in France. It is reported there that the mortality was reduced from 80 per cent. or more to about 15 per cent. by the use of the serum furnished by the Rockefeller Institute. Professor Calmette, on his return to Lille from the International Congress on Tuberculosis, took with him some of the serum, and later large supplies were sent to him, Professor Vetter and Professor Roux, so that the Rockefeller serum is the basis for most of the reports which have appeared in the French journals. Flexner himself, in a report of 712 cases (all ages), gives a mortality of 31.4 per cent. Of course, the earlier the serum is injected the better in the general results. It is obtained from horses immunized by injections derived from many strains of the meningococcus. It takes four or five months before the serum of a horse is strong enough for use. The only conditions made so far by the Rockefeller Institute in distributing the product are that full reports of cases treated should be returned, and that the diagnosis of cerebro-spinal meningitis should be confirmed by bacteriological examination. The serum was first employed here therapeutically about three years ago. Its use has since spread to Germany,

France and Great Britain, as well as all over this country and Canada. "Supplies," says Doctor Flexner, "have even been sent to India and Jerusalem, but they have as yet made no reports."—*The Post-Graduate*.

Evidence of Respiration

After carefully reviewing the literature relative to the Breslau test, Hobohm publishes the following conclusions in the *Vierteljahrsch f. Gericht. Med.* No matter whether the body be fresh or decomposing, distension of the stomach and first part of the duodenum may always be regarded as evidence of life. No medico-legal importance is to be attached to possible intra-uterine respiration, for in order that air may reach the intestine it is necessary that the child should not die immediately after birth. When intra-uterine respiration and artificial inflation can be definitely excluded, the presence of air in the stomach alone strongly suggests live birth. It must, however, be remembered that a few bubbles of air in the stomach, without distension and buoyancy of the organ when placed in water, do not by themselves constitute evidence of respiration. The gases formed by putrefactive processes never give rise to a uniform distension of the lumen. Lastly, in cases where a positive result has been obtained from the lung test, absence of air in the stomach is of no value as negative evidence of respiration.—*The Hospital*.

In order to show that spitting on the sidewalks is dangerous to health, an investigation has been made by Dr. John Robertson, medical health officer of Birmingham, England, which shows that seven per cent. of the "spits" collected in public places contained consumption germs. On the other hand, the dust collected from the floors of the cottages of the Adirondack Cottage Sanitarium has been found to be free of tuberculosis germs, showing that a careful consumptive is not dangerous.—*Western Medical Review*.

Warning Against Selecting the Medical Profession

The Leipsic League has lately again undertaken to dissuade the graduates of our secondary schools from undertaking the study of medicine. In the circular issued for this purpose it is

noted that in 1908 only 618 places could be placed at the disposal of 898 physicians who were seeking localities to practise through the intermediation of the League. In that year only 6,000 persons were studying medicine, but the number of students of medicine has risen continually since 1905 from 6,080 in 1906, to 8,568 in 1908-09, and in the summer semester of 1909 to 9,509. That the income of German physicians is quite small has been recently shown by a statement of the statistical bureau of Saxony. According to this, in the entire Kingdom of Saxony, 34.8 per cent. of the physicians had not yet an annual income of \$1,050 (4,300 marks), and only 44.8 per cent. of the physicians received more than \$1,500 (6,300 marks). In this calculation of the income, the professional expenses have been deducted, but on the other hand the income from private property of man and wife and all other outside sources are included. These economic conditions will become even worse after the introduction of the new imperial insurance law, for then all persons who have an income of \$500 (2,000 marks) and under will be entitled to sick insurance. This means that in Prussia, for instance, 92 per cent. of the population will belong to the Krankenkassen.—*Berlin Letter, J.A.M.A.*

Sleepiness should not be overcome as a rule, as it is Nature's signal to stop work. If efforts are continued in spite of fatigue, the quality of the work is poor and the exhaustion inordinate. Students constantly make this error, and do all sorts of things to keep awake to burn the midnight oil, when if they would go to bed and rest they could accomplish far more in half the time in the morning, with little or no fatigue. Yet there are times when sleepiness and fatigue must be overcome without resort to stimulants which injure the judgment. The tired physician with a critical obstetric case, for instance, must have his wits about him, and it will aid him vastly to go to an open window every fifteen or thirty minutes to take a dozen or two of deep inspirations of cold air. His exhaustion in the end will be great, but he can make it up later. As a matter of fact, surgeons and others whose work requires the keenest perceptions, instinctively choose the early morning for their best efforts, reserving the afternoon for "low-pressure" tasks or recreation. That is, it is far better to so live that we do not need the stimulus of these extraordinary methods of respiration.—*American Medicine.*

Justifiable Abortion

It is common for some physicians to try to make themselves believe that they are justified in producing an abortion because of some minor condition or some condition of environment or of circumstance with which the patient has to contend.

A German writer claims that only two or three conditions justify interruption of pregnancy. One is uncontrollable vomiting, the other is tuberculosis, and the last is a condition of deformity which would interfere with natural expulsion. But with many this last is no longer considered justifiable, because the Cæsarean operation has been so greatly simplified, and the mortality when skilfully performed, is so very low that it is counted as a justifiable and dependable procedure.—*Elling-*

The Wasserman Reaction

W. J. Heimann, New York (*Journal A. M. A.*, May 21), proposes a method of reporting the Wassermann reaction similar to the blotting-paper hæmoglobin test. We have determined what intensity of color in hæmoglobin represents 100 per cent., and have reconstructed our conceptions of weaker concentrations by numbers accordingly. He describes the Wassermann test and says that the gradations between the two extremes of total binding of the complement and total hæmolysis are infinite; every man has his own system of recording them. He uses graduated centrifuge tubes and, counting total hæmolysis as zero and 1.20 c.c. of erythrocytes in bulk or the maximum amount as one hundred, by comparing the volume of surviving erythrocytes according to the scale and recording the result in per cent., one immediately has a quantitative idea of the reaction. Thus, if 1.40 c.c. of erythrocytes are left the reaction is 50 per cent.; if 1.30 c.c., 66.6 per cent. He gives a table showing the advantages of this method in actual practice and describes the appearances in a test tube in which the reaction has been made after from 16 to 24 hours have elapsed. With a negative reaction we have a clear wine red fluid; in a strongly positive test the red cells lie heaped at the bottom and above them the fluid is pure white. If the test be positive but weaker, the cells are below and the supernatant fluid containing dissolved hæmoglobin is pink, salmon-colored, deep red, etc., according to the amount of hæmoglobin in the solution. The weaker the reaction the deeper the intensity of the fluid and the smaller the number of corpuscles. These differences, expressed mathematically, become definite and objective

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Original Communications

SERUM TREATMENT OF LOBAR PNEUMONIA

JAMES H. DUNCAN, M.D., CHATHAM.

The paralyzing multiplicity of the treatments advocated for that formidable disease, "Acute lobar pneumonia," is such that it tends, at first, to drive most thoughtful young practitioners into the unfortunate position of Nihilism, expressed in the oft-repeated dictum, that "No treatment materially affects the course of the disease." It seems to me that later thought and experience should lift us beyond this attitude of negation, and each worker should catch some light from his experience to show him "a more excellent way."

Previous to the introduction of pneumolytic serum, my own experience has led me to accept and follow out the treatment by free elimination of toxins, through the emunctories, especially by the skin. If free sweating can be commenced in the early days of pneumonia, and constantly maintained, the disease will terminate by lysis, and never reach the critical crisis period. There are a few cases, more frequently among children, in which sweating by any safe method cannot be attained, and these are generally exceptionally severe and serious ones.

For the past two years and a half, while not forgetting or neglecting elimination, I have been using pneumolytic serum, as produced by Stearns, and it is with the object of giving my experience with this method of treatment that I take up my pen at present.

During the above-mentioned period I have used, myself, or advised the use of a serum in over twenty cases of well-marked lobar pneumonia, a brief account of the more typical of which I give below—two exceptions to the otherwise invariably successful issue have occurred, but not unexpectedly.

The first case in which I used the serum was in a man of forty years—large and muscular, but subject to attacks of very severe bronchitis, which ordinarily recovered slowly and often developed a distressingly spasmodic character. The patient had suffered for a week with la grippe, before the initial pneumonia chill developed, but had not been under medical observation. The chill was very violent and prolonged, and the fever, when I saw the patient, twenty-four hours later, registered 105 in the mouth, the pulse was 80 full and bounding, respiration 40 and painful, on the right side—fine crepitation over the right lower and middle lobes was remarkably well defined. The patient was not only distressed, but very anxious, as one of his brothers had died of a right-sided pneumonia two years previously, and another the previous year had barely struggled through an attack to a slow, tedious convalescence. In addition to the usual vigorous elimination, I gave 10 c.c. of pneumolytic serum. The following day I found temperature 103, pulse between 75 and 80, respiration down to thirty, cough was loose, sputum beginning to be rusty, and sweating abundant. I then gave a second 10 c.c. of serum. Twenty-four hours later I found temperature 100, pulse 72, and respiration still 30, with very abundant rusty sputum, while imperfect consolidation clearly marked out the middle and lower lobes of the right lung; the recovery after that was uneventful—the case terminating as an ordinary cold might, without recurrence of rise of temperature or any other distressing symptom, although the rusty sputum lasted nearly the week.

The second case occurred in a young girl of eighteen years of age. I saw her four days after the initial chill. The girl was very slight and delicate and much depressed from previous la grippe—pleurisy was marked and distressing, while dull percussion and bronchial breathing over basal right lobe showed well-developed pneumonia, temperature 103.2, sputum was markedly rusty. I gave serum at once, and twenty-four hours later found symptoms much alleviated. I did not give a second dose, which I now know was a mistake; the patient, however, recovered slowly without crisis and without complication.

Shortly after the above case occurred I was called up by phone by a fellow-practitioner in a neighboring town. The message ran as follows: "Can you give me any suggestions for the treatment of pneumonia? I have a case here about which I am very anxious, a most valuable life, the mother of six small children. She is very sick. The type of disease seems very severe. I have just lost a young, vigorous man from a similar attack." In answer to this request I advised the use of serum and sent

over two packages. Sometime later I received the report of this case, which was, in brief: "After the first dose distinct amelioration of the symptoms occurred, and after the second all cause for anxiety disappeared." The same gentleman consulted me regarding pneumonia in an old man nearing eighty years of age—it was early in the case, and I received no details excepting that the serum was used and the result was satisfactory.

In selecting from the cases in which I have used the serum my effort is, as far as possible, to give those which differ as much as may be as to conditions and time.

About a year after beginning to use the treatment I was called to see, in consultation, a boy of ten years; he had been ill with high temperature, but ill-defined symptoms, for several days; respiration was about 40, pulse quite rapid, and temperature 104. On very careful examination I was able to define an area of suppressed breathing, with some fine crepitation at the right base—in a few hours the physical signs became unmistakable, with a rising temperature. We had to wire for serum, which was administered the following morning; the usual course resulted; distinct relief occurred after the first injection, while the second dose was followed in a few hours by a fall of the temperature to 100, with corresponding improvement in all other symptoms, and an uneventful recovery followed.

Shortly after the last-mentioned case I saw another, through the kindness of Dr. McDonald, of Dresden. The case, as I remember it, had been in progress for at least six days; the patient, a previously healthy young lady of sixteen or seventeen, was in rather a desperate condition, extensive general bronchitis, with left-sided basal pleuro-pneumonia, respiration was very rapid, great cyanosis; rapid, feeble and unsteady pulse, temperature 103. With some doubt and hesitation we used the serum; quite marked improvement seemed to follow the next day, but symptoms remained urgent for days, and convalescence extended over weeks and months, and, indeed, was not complete for over a year. This, however, was due to the pleurisy. Intense pleural thickening developed, with the usual very slow return to normal temperature and pulse rate. The only value the serum had in this case was to modify one factor in a most serious complication, and thereby turning the scale, if it were but by a hair's breadth, in favor of life.

My series includes two other cases of pleuro-pneumonia, both in children under seven years of age; in both of these the result of the serum was prompt, but disappointing on account of the pleurisy, which caused considerable lengthening out of the fever-

ish period, and produced a slow and anxious convalescence.

There is one case which I should have mentioned, seen with me by Dr. Dwyer, of Toronto, and Dr. Sullivan, of Chatham, in which the serum produced very remarkable improvement, but in which the slow resolution and pleural thickening rendered the patient's state very critical for a long time. Recovery, however, has since been complete.

The two cases in which no special good seemed to result from the treatment were both such that we had no right to expect results. The first patient was a woman about fifty years of age, a case of chronic tuberculosis. The lower lobe pneumonia had reached the ninth day, the temperature was not high, the pulse bad, and respiration much embarrassed, both apices were full of moist râles, and distinct evidence of commencing trouble in the previously uninvolved base—the only reason for suggesting the serum was the hope that the fresh development might be arrested. The patient, however, died within a few hours of the time I saw her. The other fatal case was a colored child, six years of age, small and deformed as the result of spinal caries. An attack of measles had merged into one of extensive general bronchitis, with a consolidated left base. Beyond a slight lowering of temperature, no result seemed to follow the serum treatment, and death followed within thirty-six hours of my first seeing the patient.

In conclusion I would say that my two years and a half of treatment of lobar pneumonia by pneumolytic serum has convinced me:

1. That this method is of real and great service in shortening the period of disease—in stopping it before the critical crisis arrives, and in favoring a brief and uneventful convalescence.

2. That serum is probably of slight value, if any, after the sixth day of the disease.

3. I have only once found it necessary to give more than two injections, that is, twenty cubic centimeters of serum, and that one case was so badly complicated with pleurisy that no satisfactory conclusion could be drawn. When I gave the third injection the pleuritic were by far the predominant symptoms and seemed little affected by that dose.

THE RELATION TO EXTERNAL EYE AND ORBITAL DISEASE OF DISEASES IN THE NOSE, THROAT AND EAR*

COLIN CAMPBELL, M.D., TORONTO.

It is not so very long since ophthalmic surgeons were also general surgeons, and the work of such men as Bowman, Hutchinson and Tay show the advantages they possessed even in their day by examining all parts of the body. The amount of literature on the present subject now appearing shows that ophthalmologists are again awakening to the need of a broader view of their responsibilities. The day of indiscriminate mercury and pilocarpine lingered too long with us. To-day we want to know in each case the cause of eye disease, and, more and more, we seek it in other parts of the body. The bacteriology of the eye is doing much to point to cause and treatment, for the similarity of the fauna of the eye with that of the nose and mouth is striking. The relation of staphylococcal infection of the conjunctiva and cornea with adenoids and nasal suppuration is well known. The pneumococcus, by far the most important organism in the etiology of hypopyon ulcer, and of disease of the lacrimal sac, and a frequent cause of conjunctivitis, is usually to be found in the mouth; whereas Axenfeld was able to find it only twice on healthy conjunctiva, in fact only the *zerosis bacillus* and the *staphylococcus albus* are to be found thereon. The *diplococcus* of Morax and Axenfeld, the common cause of chronic and angular conjunctivitis, and of catarrhal ulcer of the cornea, was found by Treacher Collins in the nasal secretion of 125 of 300 school children with conjunctivitis, and Erdmann found them in 64 out of 142 noses, the majority apparently healthy, without co-existing conjunctivitis. He showed that they could live in dried nasal secretion for several days, and proved by inoculation that they still maintained their virulence. Axenfeld found them in sores at the angle of the mouth.

In many such cases the nose should obviously be treated also. Infection of the conjunctiva, however, is not easy. Bach has shown that bacteria cannot ascend the healthy nasal duct, although inflammation can extend *in continuo*, and nasal infection, by obstructing the tear passages and producing hyperaemia of the conjunctiva predisposes it to infection. Diphtheria rarely

*Read before the Section of Ophthalmology and Oto-Laryngology of the Academy of Medicine, Toronto, December 16, 1909.

attacks the conjunctiva, and the same may be said of the bacillus of influenza. The streptothrix found in canalicular concretions is not identical with the leptothrix buccalis. Tubercular infection of the conjunctiva is more commonly endogenous than ectogenous. The handkerchief is undoubtedly a frequent medium for transmission, and there is another way in which the nose is responsible for epidemics, *viz.*: the infective agent passing down the tear duct is scattered broadcast by sneezing and coughing. Lacrymal sac infection from the nose is also made difficult by the different ways in which their mucous membranes react to the same organism. They would appear to possess different affinities or receptors. The sac is relatively immune to the gonococcus, and even the pneumococcus, the most common organism found, requires assistance, such as the stoppage of the duct by nasal conditions. Whether tuberculosis of the sac originates more frequently by blood infection or from the nose or conjunctiva is unsettled. In a young man on whom I recently operated the nose presented the typical appearance of lupus involving the anterior half of the inferior turbinal and floor of the nose, and on the same side a boggy lacrymal mucocele. Tubercle bacilli were found by Dr. Archibald in sections from the turbinal, yet the sac when excised showed only the changes of simple inflammation. Here all the conditions necessary had existed for months, yet infection had not taken place.

Orbital complications of infectious diseases formerly considered metastatic, are now known to be due to infection from the accessory sinuses.

Even the orbital cellulitis of infants need not, as stated by Axenfeld, be excepted, for the ethmoidal cells are present at birth. Tubercular periostitis of the orbit is usually due to metastasis by the blood stream, but purulent periostitis of such origin is rare, and cellulitis extremely so. The bacteriology of orbital cellulitis is identical with that of nasal sinus disease.

Fetid antral empyaemata, which are so often due to carious teeth, contain pyogenic and putrefactive organisms, but non-fetid cases contain no putrefactive germs. Pneumococci are nearly always present, either alone or with streptococci or staphylococci. Other organisms are rare.

Extension to the orbit may be by the venous channels or by necrosis of the intervening bone plate and periostitis. Thrombophlebitis ophthalmica can also be due to thrombosis of the cavernous sinus, itself infected from a septic nose, mouth or ear. The only case I have ever followed proved post-mortem to be infected from the posterior ethmoidal cells, and that was in a

child of ten. I once saw a tonsillitis prove fatal with orbital signs of phlebitis. Infection from the pharynx would here be by the pterygoid plexus. The absence of valves permits the extension of infection *via* the petrosal sinuses from the middle ear and mastoid to the cavernous sinus, and is apt to show it by causing paralysis of the sixth nerve. Exophthalmos in such cases probably always means extension to the orbital veins.

That optic nerve inflammation and atrophy is sometimes due to nasal diseases is undoubted. Exophthalmos is usually present. The nerve is more nearly related to posterior ethmoidal than to the sphenoid, in fact the periosteum of the canal is merely the dura of the nerve, and Onodi found actual openings in the bony wall in many cases. De la Personne believes that most unilateral optic neuritis is due to nasal disease, and there has been much literature recently in support of this view. My own experience has not borne this out, as in two recent cases of acute unilateral retrobulbar neuritis in my own practice no evidence of nasal disease could be found. Both had progressed from central scotoma to nearly total blindness in a few days before showing optic neuritis, and both recovered spontaneously in a short time. Parsons, Snell and others report cases of orbital cellulitis and optic neuritis from carious teeth and following extraction. Involvement of the third nerve from cerebral disease of otitic origin is undoubted, but whether it occurs without other cerebral involvement is open to question.

I can quote the co-incidence of a septic polypus-filled middle ear, with total third nerve paralysis and slight optic neuritis on the same side, and to-night I showed a man with ophthalmoplegia interna in the left eye and till recently a septic right ear. In neither case could other cause be found.

Lagophthalmos, due to facial paralysis, I have seen follow operation for acute frontal sinus disease. The same condition after mastoid operation we have all seen. Politzer says it is rare after mastoiditis *per se*, but that he has seen slight transient paralysis during acute otitis media. I last week saw a child aged four who had developed facial paralysis during the first week of otitis media complicating scarlet fever. The ear was filled with fetid debris, and the lining was necrotic. She died two days later.

Selected Articles.

THE DOMINANCE OF ETIOLOGY IN MODERN MEDICINE*

BY MITCHELL BRUCE, M.D.

INFECTION AND IMMUNITY.

Medical treatment of the infectious processes is relatively disappointing, mainly because we do not enjoy the incomparable advantage which presents itself to surgery, of dealing with the infection in advance of its action, by employing aseptic measures to prevent the contact of it with the blood and tissues. In a number of instances—unhappily too few—successful resistance can be offered to intruding micro-organisms and to their toxic products. An antibody or an antiproduet may be introduced into the blood, or developed in it, in time to establish immunity.

In the causation of acute disease there are three factors to be reckoned with. First, there is the cause which we call essential, the specific infection, an extrinsic influence, the element without which in the particular instance, and in every other instance, the disease would not have occurred. Secondly, there is the patient's resistance to the specific infection, an intrinsic element. Thirdly, there may be incidental or concomitant circumstances or associations which are not essential, because not present in every instance of the disease, but which, by occurring incidentally in particular instances, either favor the essential influence directly in its invasion of the body, or, on the other hand, lower resistance, and thus indirectly contribute to the production of the disease.

INCIDENTAL CIRCUMSTANCES IN CAUSATION.

It is of this third element of etiology that I desire to speak to-day, with respect more particularly to its nature and forms, and with respect to the opportunities that it affords the practitioner, not only to forecast, prevent, treat or otherwise control disease, but to take part in the advance of medical science.

These concomitant circumstances are of great variety, both in kind and in the manner of their incidence on the body. The

*Extracts from the address on Medicine delivered before the British Medical Association.

outstanding feature of the medicine of the present time is the study and practical application of the doctrine of general etiology from the two sides—from the second as well as from the first side, that is, with respect not only to the nature and incidence of the specific causes of disease, but also to the nature of immunity and the circumstances under which it fails. Whilst the pathologist in our public institutions, in hospitals, and in private laboratories, investigates the biology of germs, and the immunizing value of the blood by means of the opsonic index, and otherwise, the practitioner estimates, as he has done from time immemorial, with more or less intelligence and success, the value of what he calls his patient's constitution.

Not all of us, indeed but few of us, can work at the higher pathogeny. In respect of infections, we can but admire the skill and perseverance of our bacteriologists, assimilate as much as possible of their conclusions, and seek their help in the diagnosis and treatment of this class of diseases. Bacteriological investigation is too delicate and too difficult, and depends too much for its usefulness, and even for its safety, in practical medicine on correctness of conclusions based on skilled observation, to be conducted by the practitioner himself unless in a few cases. But we can all take a share in the cultivation of knowledge of the other branch of etiology. After all, the pathological laboratory is not the natural field of operation and observation of the action of the infections, excepting in those instances, happily not common, where the worker himself falls a victim to the disease that he is investigating. A knowledge of the patient's constitution, based on his record, is the peculiar privilege and possession of the family practitioner who takes full advantage of his opportunity. Living in the society of his patients, born and bred, as he may have been, in their midst, he knows, or ought to know, the conditions of inheritance and life, good and bad, under which their constitutional resistance to acute disease has been and is being shaped. If he has made proper use of this opportunity, the family practitioner is in as good a position as the most skilled pathologist to give an opinion on the prospect of successful resistance—that is, of recovery—in a case of typhoid fever or of pulmonary tuberculosis.

There is no better test of a good practitioner than the possession and exercise of a faculty of observing and judging with correctness the effects of incidental circumstances on the patient. The experienced doctor, as contrasted with the beginner fresh from hospital, knows that every passing event affects a case for good or for bad, and he never fails to give it its proper value in

estimating the condition and prospects of his patient. He knows that by keeping critical watch and firm control on the patient's surroundings he may be able to modify favorably the progress of a case that appears altogether unpromising when regarded solely from the side of its essential nature. He has learned that it is with a patient, not with a disease, that he is concerned; with a process, not with a lesion. An attack of paroxysmal dyspnoea in the course of chronic Bright's disease he does not interpret as directly due to increase of the renal lesions in degree or extent, but to careless indulgence on the part of the patient in meat or wine. He is prepared to find that return of pyrexia during convalescence from typhoid fever has been caused by a visit from friends, and is not a true relapse from reinfection. And it is because of his experience of the actions of extrinsic incidental influences in modifying the course of disease that the practitioner cautions the subjects of chronic quiescent appendicitis against exposure to cold and wet and fatigue.

The different influences that will surround our patient, and will tell on him for good or for evil, are forecasted, and, let me add, forestalled if possible, for in the proper appreciation of the prognostic conclusion lies the opportunity as well as occasion for preventive treatment. And this, let me repeat, is what the best type of family doctor understands and practises, passing his days amongst his patients, whose careers he helps to shape and to guide, and to control by advice, by encouragement, by warning, by reproof if necessary, as well as by means of dieting and drugs.

MALIGNANT DISEASE*

BY GILBERT BARLING, M.B., F.R.C.S.,
Professor of Surgery in the University of Birmingham.

The great era founded on the genius of Pasteur and Lister has extended its splendid influence over our knowledge and treatment of malignant disease. The revelation of bacterial and allied infections as the cause of so many diseases inspired the hope—indeed, I may say the expectation—that the origin of cancer would soon be laid bare. The veil is still unrent, the secret is yet hidden, and the world waits with painful interest for the revelations of the future. Our position to-day is in marked contrast to that which obtained a comparatively few years ago; then the predominant view was that cancer was a systemic disease of which the tumor was the local manifestation, and removal of the evident growth was rarely regarded as anything more than palliative. This conception of the nature of cancer provided a disastrous example of the influence of bad theory on practice. It led in most cases to totally inadequate removal of the disease, the speedy return of which *in loco* was held to substantiate the belief that it was due to a blood dyscrasia. By clinical observation, by patient pathological investigation, and, more recently, by laborious observation and experiment on some of the lower animals, we have obtained, and are still obtaining, knowledge which is pregnant with power and which is far in advance of that in the hands of our immediate predecessors. We can only fully appreciate this when we review our position from the three sides—experimental, pathological, and clinical. In the time at my disposal I must be content to address myself to three main considerations. Briefly, these are:

1. What experiment has taught us as to the growth of transplanted carcinoma, and the methods by which immunity can be conferred on inoculated animals.
2. Our knowledge of resistance to malignant disease in the human subject.
3. The means available for its successful treatment.

RESULTS OF EXPERIMENTAL INVESTIGATIONS.

If portions of a carcinoma from one mouse are grafted into several other mice of a similar strain, a certain number of these grafts, but not all, develop and form malignant growths indis-

* Address delivered at the Annual meeting of the British Medical Association.

tinguishable from the primary tumor, and will eventually determine the death of the inoculated animals. If the growth of these new tumors be investigated from day to day several points can be clearly shown. First, that the tiny nodule introduced grows by multiplication of its own epithelium and not by conversion of the cells of the host into carcinoma cells. Whilst the epithelial cells introduced are the source from which all others are formed, the part played by the tissues of the receiving host is of the utmost importance. The inoculated fragment consists of epithelium supported by a varying stroma of connective tissue, the two being blended in different proportions and on different patterns, producing carcinomas of varying type, as we find in human beings. The fate of the epithelial cell I have already mentioned. What happens to the connective tissue of the stroma? It degenerates, dies, is removed by phagocytosis, and is replaced by proliferation from the connective tissue cells of the host, which new tissue speedily becomes vascularized, and so provides the intruded epithelium with nutrition. If this new production of stroma from the host does not occur, the epithelial cells die, and the inoculation of cancer fails. Thus we learn that experimental carcinoma is a parasite, the essential element the epithelium, living its own life, and using its host as a provider of nutrition through the new stroma and its accompanying blood vessels. But we learn also that not content with exciting a production of new stroma and blood vessels to supply its needs, the epithelial cell so impresses the tissues in which it is implanted that a stroma is produced exactly similar to the stroma in the primary growth, be it of great amount or little, be it of one pattern or another. If the stroma of the primary tumor be highly vascular, so that the growth is of the hemorrhagic type, this will be exactly reproduced by successful inoculation.

If the experiment of transplanting carcinoma from one mouse to another be repeated sufficiently often another phenomenon may arise—a no less remarkable occurrence than the production of a new form of malignant growth, namely, sarcoma, which develops side by side with and is closely blended with the introduced carcinoma.

HUMAN RESISTANCE TO MALIGNANT DISEASE.

I would now turn to the second part of my theme, from experimental to pathological and clinical knowledge, both of which afford evidence of the struggle in the human subject between the tissues of the host and the parasite cancer. It is perhaps not clearly recognized that such a struggle exists; the tendency is

rather to look upon cancer as a constantly progressive disease, neither halting nor wavering in its course.

Of the absolute nature of the resistance to malignant disease at present we know little if anything. We cannot recognize the factor which heightens or lowers it, whether it be a chemical variation in the tissues or an influence produced through the nervous system, stress or anxiety perhaps exaggerating or exaltation diminishing the activity of the growth.

I think, however, we can recognize one striking feature in the destruction of the cancerous epithelium which is common to the experimental production of immunity, to the disappearance of growths under radium, to spontaneous recessive processes in the human body. This is the active part played by the connective tissues; we have an irritative overgrowth, with hyperplasia and subsequent contraction, which appears to determine the death of the epithelial cell.

TREATMENT OF MALIGNANT DISEASE.

When considering the means available for the cure or the amelioration of malignant growths, certain modes of treatment by cancer serums, by drugs, and by enzymes may be disregarded as futile. The X-rays have a real field of usefulness in relieving pain, in reducing the activity of inoperable growths, in healing rodent ulcers, if we are justified in including these amongst malignant formations. When, however, we examine the absolute curative value of this method of treatment, disappointment awaits us; personally, I have never known an unequivocal malignant growth absolutely disappear under the influence of X-rays, though apparently others have occasionally been more fortunate.

Turning to another side of radio-therapy, as provided by radium, it is necessary to speak haltingly, to avoid too enthusiastic hopefulness on the one hand, on the other too niggardly an acknowledgment of what radium as yet appears to have effected. We may clear the ground somewhat by immediately accepting radium as curative in rodent ulcer, with this reservation, that the permanence of cure must be certified by longer period of time than has yet elapsed in most of the cases treated. If we scrutinize the results of treating growths which are undoubtedly malignant, as shown by progressive local invasion and by secondary formations in lymphatic glands or other parts, we find much that is promising, but little that is conclusive. The difficulties in the way of treating malignant formations by radium are only truly appreciated when we recall the life-history and the methods by which malignant tumors invade local

and distant parts. How can we with present methods hope to pursue these successfully with radium? If a patient is the subject of an inoperable tumor, we are grateful for the benefit radium may give in the relief of pain, in the cessation of discharge, in the cicatrization of an open sore, and we should rejoice if cure seems probable. But when called upon to treat patients with operable malignant growths, are we justified in advancing radium as a substitute for excision? Personally, I would not at present take this responsibility. My main objection to the use of radium, even tentatively, in such cases, is the constant danger of lymphatic and vascular dissemination which may occur in the period occupied by the treatment. My conclusion would for the present limit radium to the treatment of the least hopeful conditions until much wider experience has been obtained. It would also be of advantage, for the present, if treatment by radium were left in the hands of the few rather than the many.

A brief time must be given to consideration of the treatment advocated by Dr. W. B. Coley, especially for sarcoma. His method was based on observation of the occasional cure of ulcerated malignant tumors by an attack of erysipelas. From this Coley has evolved his treatment by the toxins of the streptococcus of erysipelas intensified by an addition of toxins derived from the *micrococcus prodigiosus*. Many of us have administered Coley's fluid during the last few years, but the use of the mixed toxins in this country has not given such results as those attained by the originator of the treatment. With such experience as I have made, I could not advise any patient with an operable sarcoma to adopt Coley's treatment, and I would dissuade him from it as a substitute for operation; but if operation were refused, or the growth were inoperable, I would certainly advise the use of the toxins, with the expectation that some patients would be greatly benefited, though at present I am unable to discriminate and say which will benefit and which will not.

With every desire to use all means available which may relieve patients of the distress, anxiety, and possible mutilation which operation inflicts, with the belief that time will provide happier and gentler means than we now possess, I am compelled to say that at the moment we have to rely upon operative measures as the great remedy for malignant disease.—*Abstract Brit. Med. Jour.*

SOME POINTS IN THE TREATMENT OF ENTERIC FEVER

BY A. KNYVETT GORDON, M.B.CANTAB.,

Formerly Medical Superintendent of Monsall Hospital and Lecturer on Infectious Diseases in the University of Manchester.

It has often occurred to me that if one takes the subject of enteric fever as it is treated in most of the modern text-books of medicine, one finds it handled as if no very great change in our knowledge of the pathology of that disease or in our methods of dealing with it at the bedside had taken place in the last few years; in some works, in fact, the article might have been written twenty years ago.

As a matter of fact, however, such change has occurred, and certain discoveries in the field of clinical pathology have been reflected in the practice of those physicians who have had to deal with the disease in bulk, so to speak, with the result not only of considerably reducing the hospital mortality of the disease, but of—even more markedly—alleviating the sufferings of those afflicted with it. I purpose, therefore, mentioning some points which have struck me as essential in the treatment of Enterica, mainly from the point of view of the hospital resident, though, as will be seen, there is no great difficulty in adapting most of them to the exigencies of private practice.

CHANGED VIEWS.

Let us first see how our conception of the pathology of the disease has changed. Formerly we regarded the patient as one who was suffering essentially from ulceration of a more or less considerable portion of his intestine, which resulted primarily in diarrhœa, and sometimes was responsible also for intestinal distension, and often for perforation of the bowel, with its necessarily fatal termination. Certain toxins were formed at the site of the ulcers which, when absorbed into the circulation, gave rise to the general symptoms of pyrexia and prostration, and as a necessary consequence of their action on the cardiac muscle the patient suffered a prolonged and debilitating convalescence, which often rendered him incapable of completely performing his ordinary work for many months. Clinically, this view of the disease meant necessarily that the patient was fed on an entirely fluid diet consisting often of milk alone, not only during the pyrexial period, but usually for a fortnight or more after the

temperature had fallen; every slight rise of temperature after solid or soft food had been commenced was regarded as an indication that the physician had been too venturesome and that a return to the fluid dietary was indicated.

Nowadays, however, we do not regard the ulceration quite as the prime factor in the disease; we know that in the first week of the illness the bacillus typhosus is found in the circulating blood in almost every case where a careful technique is employed, and that as the illness progresses the organisms leave the blood and are discharged, *via* the bile, into the duodenum, so that actually more bacilli are present in the commencement of the small intestine than at the site of the ulcers themselves; indeed, it is not unlikely that the ulceration is quite a secondary process and is due to irritation of the intestinal lymphatic patches by the bacilli which have entered from above. We know also that in fatal cases the degree of toxæmia observed at the bedside is not proportional to the extent of ulceration found post-mortem.

THE MODERN IDEA.

This work of the pathologist was, however, preceded by a change in the method of treating enteric fever which has been practised for many years now in hospitals, though it does not appear to have found its way into private practice any more than into the text-books. It consists essentially in recognizing that diarrhœa is not, in the average case, a necessary symptom of enteric fever, but that it can readily be produced by the administration of milk (or perhaps any other food) after the patient has shown his inability to digest it. In practice the diarrhœa almost always ceases when the milk is stopped, and the milk curds, which are an essential feature of the "typical typhoid stool," disappear from the fæces. Moreover, the converse to this also holds good, namely, that the "typhoid stool" is often seen in other diseases (notably in cases of septic scarlet fever) when milk is inadvertently given to excess. The result of this change in the dietary of the enteric patients was not only a great reduction in the immediate mortality (which persisted irrespective of the varying severity of different epidemics), but also in an even more marked diminution in the incidence of those complications—namely, perforation of the intestine and relapse of the disease, which had been previously held to be due to premature resumption of solid food.

The modern practice in this respect may be summed up in the maxim to feed the patient irrespective of his temperature

chart on such food as he can digest, the idea being to enable him to combat the toxæmia, which is the essential feature of the complaint, by providing him with as much nutriment as we safely can.

How It Works.

How does this work out in practice? In the great majority of cases admitted to the fever hospital the patient has diarrhœa and is passing milk-curd in the stools, so as a rule he is given nothing but water for twenty-four or even forty-eight hours; if he is very weak, a little egg albumen and possibly glucose is added to the water. When the diarrhœa has ceased, as it usually does, albumen-water, glucose, and perhaps baked custard and jelly, are administered.

Meantime attention is paid to the toilette of the mouth, for in a large number of cases the dry tongue is a sign of oral sepsis rather than of enteric fever; carious teeth are extracted under local anæsthesia.

In the majority of cases—again irrespective of the temperature chart—the patient is now hungry and has no distension of the abdomen and his tongue is moist. So the diet is gradually extended by the inclusion of bread and milk, bread and butter, pounded fish beaten up, or poached eggs, and ultimately pounded chicken, the essential point being to vary the menu from day to day and to give the patient such a quantity of food as to leave him slightly hungry after each meal. Tea and coffee are given freely and are generally much appreciated by the patient. Shortly, the indications for the use of solid—though carefully pounded—food are hunger, a moist tongue, and absence of diarrhœa and abdominal distension; but there remain, of course, some cases—generally those whom the physician does not see, or perhaps does not correctly diagnose, at a sufficiently early period of the illness—where diarrhœa is profuse and intractable and is accompanied by meteorism.

Here one must give fluid food only, and albumen-water is usually our sheet-anchor, though some preparation of concentrated milk proteid may often be safely and advantageously added; milk itself almost always aggravates the trouble, and beef-tea or meat extracts are quite inadmissible. Drugs, however, are sometimes useful, and I have found enemata containing turpentine very helpful sometimes, and also medical Izal oil given internally in the form of an emulsion in mucilage of tragacanth in doses of three minims of the pure oil (to two ounces of the emulsion) every two hours by the mouth. Personally I do

not like opium in these cases, it almost always increases the distension, and thus tends to favor the occurrence of perforation of the intestine, while it completely masks the signs of this catastrophe when it arises. A long, soft tube carefully introduced into the rectum, and allowed to remain there for an hour, is often useful.

SOME POINTS IN TREATMENT.

The use of Izal oil perhaps demands a word of explanation; it is not given with any idea of disinfecting the ulcers; in the light of modern pathology it probably would not serve any very useful purpose if we could do this, and we fairly obviously cannot, for any antiseptic if soluble would be absorbed before it could reach the ulcerated surface, and if insoluble is in practice passed unchanged per rectum; but the Izal emulsion is probably absorbed in or near the duodenum, and may perhaps check the formation of toxins which irritate the intestine lower down. Whatever theory, however, be held as to its *modus operandi*, I have no doubt from a fairly extensive trial that it checks diarrhoea.

It is also a powerful diuretic and diaphoretic, and this brings me to the next point—namely, whether we can assist in the elimination of toxins through the skin and kidneys. The first suggestion for this purpose was the routine use of the cool bath, and there can be no doubt that when the external temperature is high, as in Australia and America, whence come the most markedly favorable reports of its use, it may be employed almost as a routine measure. But otherwise, that is to say during the greater part of the year in this country, I believe that cold bathing is best reserved for the sthenic type of case. In robust adults, with full pulses and much delirium (of the violent, as distinguished from the low muttering type), it often acts like a charm; but I have seen some untoward results from its use in feeble patients and in those suffering from diarrhoea. As an antipyretic, cold bathing or sponging is sometimes efficacious, but it is seldom necessary or advisable to treat the pyrexia *per se*—one should prescribe for the patient and not for his temperature chart. It would seem that the enthusiasm for routine cold bathing has rather abated of late years.

A much more efficient measure, in my experience, lies in the administration of large quantities of water, or flavored barley water, by mouth, and a skilful nurse will often get her patient to drink from five to six pints of fluid in the twenty-four hours, this form of treatment being most efficacious when combined

with diuretics such as "imperial drink" or the aforesaid Izal emulsion.

In the treatment of the ordinary case we have, then, three indications to fulfil—namely, to keep up the patient's strength by the administration of adequate nourishment in order that his leucocytes may be in a condition to afford an efficient defence against the attacks of the bacillus or its toxins, to keep the intestine as still as possible by the avoidance of anything tending to cause diarrhoea, and to assist as far as we are able in the elimination of toxins through the skin and kidneys.

COMPLICATIONS.

A few words may now be said about the treatment of certain complications of the disease, and we will take first the occurrence of heart failure. This may be either sudden or gradual, and in the former case is almost invariably accompanied by extreme dilatation of the left ventricle, which can be detected by light percussion; it is particularly liable to occur in the course of attacks which are characterized by nervous prostration rather than by much pyrexia, the type of disease, in fact, which we often meet with either in thin, worried-looking men or in overworked women. In many cases the administration of stimulants by the mouth is useless, as they are not absorbed sufficiently quickly, and hypodermic injections are but little, if at all, more efficacious, as the capillary circulation is in a state of stasis. Very many patients, in fact, die immediately, but I have seen not a few saved by the timely application by the nurse of a towel or bath sponge wrung out of very hot water to the præcordia, and it is as well that instructions to this effect should be left with the attendants. Inasmuch as the condition is invariably accompanied by extreme pallor of the face, its occurrence can be detected by a careful nurse, or even by the patient's relatives. When the emergency has been treated a relapse must be guarded against by the hypodermic administration of strychnine at regular intervals.

FAILING HEART AND HAEMORRHAGE.

The treatment of the gradually failing heart is more difficult, as in many cases it is undoubtedly due to a specific action of the typhoid toxin on the cardiac muscle, and in consequence stimulants are not of much avail, and I am convinced that the administration of digitalis—apart from pre-existing valvular disease—is not only erroneous but dangerous, and there is, moreover, considerable risk of the dose of the drug being increased under the

belief that it is not acting sufficiently while the patient is in reality suffering from digitalis poisoning.

It is necessary here to mention the use of alcohol in enteric fever. My own view is that, in large doses, given for rapidly occurring heart-failure, and discontinued as soon as the emergency is past, brandy is very useful indeed, but that the common practice of administering two or three ounces of spirit daily for two or three weeks is most harmful. I have never satisfied myself that such doses were of any value to the circulation, and I am sure that they often produce or aggravate diarrhœa. Probably, strychnine is the most valuable drug we possess as far as the heart is concerned, and, if given hypodermically, does not seem to increase intestinal peristalsis.

The treatment of hæmorrhage from the intestine not only resolves itself into the administration of opium very freely, but it is also necessary to avoid the use of any hæmostatic which has the effect of raising the general blood-pressure. What then happens is that the action on the vaso-motor system outweighs the local effect on the injured vessel, and in practice such drugs as adrenalin, ergot, gallic acid, and the like almost always increase the hæmorrhage.

Just as it is necessary to use opium in hæmorrhage, so it is essential to avoid it in anything that may possibly turn out to be perforation of the intestine. The key to the successful treatment of the latter complication is that the surgeon shall have the opportunity of opening the abdomen in the pre-peritonitic stage, and this is impossible if opium be given. Moderately severe abdominal pain in enteric fever is far more often due to perforation than is usually supposed, and the result of the advice given in most of the text-books to give opium for abdominal pain is accountable for the descriptions in the same volumes of the symptoms of perforation, which are in reality those of the subsequent purulent peritoneal effusion. If the patient has an attack of colic, it can usually be relieved by the application of a hot fomentation, and, indeed, often by a cup of hot tea. In practice patients do not always, or, as I believe, usually suffer from severe collapse when perforation occurs. It is not necessary to consider seriously the view that any other procedure except prompt laparotomy can be of any avail in the treatment of this distressing occurrence.—*The Hospital*.

SPASMODIC PSEUDO-TUMORS OF THE LARGE INTESTINE

BY PROFESSOR MAURICE LOEPER, M.D.,
Physician to the Paris Hospitals, Professor at the Faculty.

Spasm plays an important part in intestinal pathology, and is met with in almost all affections involving the intestinal canal. It is seen not only in connection with inflammatory and neoplastic affections, for it not infrequently accompanies nervous diseases as well as infections and intoxications localized in this tract. It may be primary or secondary, but whatever its etiology it always presents approximately the same features, *viz.*, pain, constipation and intestinal obstruction, or even occlusion. In some instances it is located in the small, in others in the large, intestine, and the differences between these two distributions are manifested in the physical signs rather than in the functional disturbances.

As a matter of fact, owing to the extreme mobility of the loops of small intestine and the comparative thinness of their walls, their contractions are scarcely perceptible to the hand, whereas the fixity of the large intestine and its superficial situation enable us to make out easily enough the existence of spasmodic contractions in the iliac fossæ and the hypochondria. This spasm of the large intestine is tolerably frequent, and is met with especially in the neighborhood of the cæcum, the sigmoid flexure, and the transverse colon.

When present, the constricted segment of intestine feels like a thick cord or sausage, its mobility varying according to its site. It occurs in the iliac fossæ or the epigastrium, or, should there be enteroptosis, below the umbilicus. In a case reported by von Leube, the spasm extended from one end of the large intestine to the other, from the cæcum to the end of the sigmoid flexure.

The intestinal spasm may be limited to a particular segment of intestine, in which event one feels an indurated ring or lumps the size of a walnut or a tangerine orange, which appear and disappear, it may be, very rapidly. The spasm may, however, become fixed at a particular spot and remain stationary for a time. When this is the case, we feel for several days or weeks an elongated tumor or lumps liable to be mistaken for new growths, and as, not infrequently, the functional disturbances are well marked and the general health is, at the same time, undermined, the error is all the more probable. This is the state to which the term "spasmodic pseudo-cancer" has been given, several instances of which have come under my notice.

A man, æt. 47, came to us complaining of permanent pain in the left iliac fossa. The pain came on several times a day, in paroxysms, and it was associated with obstinate constipation, short of absolute fæcal stasis. This condition had lasted several weeks, and had given rise to a certain degree of anæmia and loss of flesh. On examining the abdomen, we discovered some enteroptosis, gurgling in the cæcum, and, over the sigmoid flexure, a tumor the size of a child's fist, which was very tender to the touch and did not take the impress of the fingers. The tumor underwent no change for twelve days in spite of the administration of castor oil. One day sand was found in the stools, followed by hæmorrhage that lasted 48 hours. The loss of flesh and cachexia became more marked, the patient's complexion assumed a yellowish hue, and suspicion was entertained of the existence of a growth. Now, however, the consistency of the tumor began to change from time to time; sometimes it was hard, sometimes soft, then all at once there was a copious evacuation of glairy matter, mucus and intestinal sand. The symptoms improved under treatment in spite of the continued passing of sand. Ultimately the tumor disappeared, so that it was in all probability a case of spasmodic contraction of the descending colon associated with intestinal lithiasis and mucous colitis.

Cases of this kind, for the matter of that, are by no means rare. They are well known to surgeons, and quite recently Mr. Pierre Duval related to me three cases in which the patients were sent into a surgical ward with the diagnosis of probable cancer of the colon, but under medical treatment recovery was rapid and complete.

The following case is one of spasmodic tumor of the cæcum. Some years ago a nervous medical student who had been working very hard came to consult me. He complained of abdominal pain, with loss of appetite, and alternative diarrhoea and constipation. With rest and strict diet he greatly improved, but four months later he returned, and on examining him I found in the region of the cæcum an elongated tumor, somewhat hard, which, in view of the patient's emaciation, was thought to be tuberculosis of the cæcum, especially as there was an evening rise of temperature and night sweats. This tumor persisted for a fortnight, and disappeared under treatment by tepid enemata, belladonna and valerian.

Dr. Chifoliau has supplied me with notes of a similar case under the care of Dr. Poirier. A man, æt. 65, had been complaining for a month of pain in the right iliac fossa, where there was a tumor. He was much constipated. Cancer was thought of, and an operation was almost decided upon, when the tumor suddenly subsided and health was restored.

Spasmodic tumors of the transverse colon are less common, but I remember a case of an emaciated patient who was suffering from abdominal pain, with vomiting and tympanites. This patient presented an elongated tumor in the direction of the transverse colon running from the left hypochondrium to the middle line, very tender to the touch, very hard, and somewhat irregular in outline. Its consistency, however, varied from day to day, and laxative treatment with tepid enemata and the administration of belladonna was followed by complete recovery in the course of several months.

Dr. Esmonet relates the case of a young woman, æt. 35, a highly nervous subject, who frequently suffered from abdominal pain. There was marked induration of the transverse colon, which persisted for three weeks, but subsided under the influence of rest, hydrotherapy and strict diet.

These cases illustrate very well the symptomatology and clinical course of spasmodic tumors of the colon, *viz.*, constipation, attacks of pain, loss of flesh and the presence of a tumor. In some instances we get bleeding from the intestine, due, no doubt, to ulceration, varicose veins or simple congestion. Then, too, there is distension of the loops of intestine above the contracted region, symptoms of pseudo-obstruction followed by the occasional elimination of intestinal sand, false membranes and mucus.

There is a good deal of nervous disturbance as a rule in these patients, who complain of palpitation and epigastric pulsation, pseudo-angina, polyuria and dysuria. Arterial tension is usually below normal.

The diagnosis of phantom tumors of the large intestine is by no means invariably an easy matter, and it may be difficult to discard the possibility of inflammatory induration and cancer. This is easy to understand in presence of loss of appetite, loss of flesh and cachexia, so frequent in these patients. Then, too, there may be a rise of temperature consequent upon the absorption of irritating intestinal products. The symptoms of obstruction, the violent attacks of diarrhœa, the cramps, the consistency of the tumor, its extreme tenderness and the bleeding, are all liable to lead us astray. But spasmodic tumors have a more even surface than new growths, they are more distinctly circumscribed, and almost invariably their size, like their consistency, changes from one day to the next. They are never adherent, and are not associated with any glandular enlargement. They may be multiple, disappearing from one part of the intestine only to make their appearance elsewhere.

Should, however, spasmodic tumor of the intestine happen

to accompany a new growth of the stomach or a latent neoplasm of the intestine, it is almost impossible to avoid an error of diagnosis.

As in most cases of spasmodic tumors there is more or less pronounced constipation, the question arises whether their super-vention is not a direct consequence of the retention of fæcal matter at a given part of the intestinal tract rather than spasm, pure and simple. The reply to this question seems easy enough, since the spasm is often met with in patients who are not much troubled with constipation, it may persist after violent diarrhœa, and is met with even when the evacuations are normal. It follows that this intestinal spasm must not be confounded with tumors due to fæcal retention.

The causes of intestinal spasm may be grouped in three classes: Among the causes of intestinal origin apart from tumors and specific diseases of the intestine in which spasm is consequent upon reflex irritation there are mild forms of irritation, a tiny ulcer, a simple erosion, the presence of gall-stones or intestinal calculi, membranes or worms. I remember the case of a child in whom I found an intestinal tumor the size of a tangerine orange, which subsided after the expulsion of three round worms.

As a rule, however, the irritation is more extensive, and chronic enteritis and intestinal enteroptosis are among the commonest causes mentioned in this connection.

When the spasm is not dependent on an intestinal cause, we must look for mischief in connection with the peritoneum or abdominal viscera to explain its presence. Mention has been made of exaggeration of the normal intestinal curves dragging on the phrenocolic ligament, intestinal adhesions or adhesions of the omentum and intestinal parietes, etc. In nervous women the presence of a cyst, of salpingitis, a fibroid or uterine irritation may set up spasm with constipation caused thereby, or of reflex origin. In man hernia, mesenteric adenopathy, cysts of the spermatic cord and diseases of the testicle may determine these manifestations.

These spasms are said to be frequent in certain atheromatous subjects, and the influence of lesions of the mesenteric arteries on the production of spasm has been pointed out by Thorowgood and Pal. Personally, however, I am inclined to think that when spasm and hypertension are present at the same time they must be regarded as consequences of the same nervous irritation.

As a matter of fact, spasmodic contraction of the large intestine is often of nervous origin. In tabetic subjects, in those suffering from myelitis, or compression of the cord, it is of common occurrence. Some authorities look upon it as the outcome of

a neuritis of the mesenteric plexus and others as a symptom of nervous instability. One thing is certain, *viz.*, that many of these subjects of spasm of the large intestine are neuropaths or hysterical persons in whom the spasm may attack either the large or the small intestine, and alternates with other peripheral or vascular manifestations.

The four principal indications for the treatment of spasm of the large intestine are: oily enemata, oily laxatives, belladonna and hydrotherapy.

Oil exerts a well-marked effect in spasmodic contractures, whether in the œsophagus, the pylorus or the intestine. The oil must be given pure, or emulsified in warm water for enemata. At the same time we may give by the mouth one or two table-spoonsful of castor oil. Belladonna is the remedy *par excellence* in presence of spasm, a twelfth of a grain of the extract five or six times in the twenty-four hours. It may be associated with the administration of valerian.

As for hydrotherapy in presence of actual spasm it will be limited to the application of hot moist compresses to the abdomen and prolonged tepid baths. Cold intensifies the state of spasm.

The physical and physiotherapeutic treatment must be associated with a moral treatment. This state of spasm often follows emotional outbreaks, and in any case is intensified thereby. The patient must, therefore, be assured of ultimate recovery, if only to give him confidence in the treatment, and in some cases it will be necessary to isolate him. If the spasm be very pronounced, with a tendency to cause obstruction or even occlusion of the intestine, it will be advisable to have recourse to electrical enemata, the action of which is immediate. Very rarely indeed is the spasm so prolonged as to necessitate surgical intervention, but of course it is always possible for there to be some anatomical abnormality, constriction by a band of the phrenocolic ligament, exaggerated hepatic or splenic curves, adhesions, etc., that may render an operation necessary.

Then, too, the treatment should be in a measure preventive, bearing in mind the relationship that exists between spasm and enterocolitis, intestinal lithiasis and simple constipation. These affections indicate the desirability of instituting a suitable diet, the use of particular mineral waters, and the administration of nerve sedatives: valerian and the bromides, accompanied by hydrotherapeutical measures. Moist compresses should also be applied every day for an hour or so to the abdomen, or wet packs and tepid douches. The last named exert a remarkable effect on all spasmodic conditions.—*The Medical Press*.

Progress of Medical Science.

MEDICINE.

IN CHARGE OF W. H. B. AIKINS, F. A. CLARKSON,
BREFNEY O'REILLY AND F. C. HARRISON.

Skin Rashes in Typhoid Fever

Excluding altogether the common rose rash of typhoid fever, there are other skin eruptions occasionally met with during the course of that disease. Dr. J. Phillips collects in the *American Journal of the Medical Sciences* all those observed in 1,230 cases of enteric treated at the Lakeside Hospital. Herpes was present twelve times; eight times as labial herpes during the first week (which was at one time held to exclude typhoid from the diagnosis), and four times later in the disease upon the body. Urticaria was noted twenty-one times; no quinine was given to any of the cases. Sudamina are not very uncommon, and Dr. Phillips supports the opinion of De Lacaze that a crop of these vesicles in the third or fourth week is a good prognostic indication. Erythema developed in seven patients. Desquamation took place in eighty-three patients, following either rose rash, sudamina, or erythema; or as a trophic change analogous to the falling-out of the hair. Measly and scarlatiniform rashes have been recorded occasionally, but there were none in this series. Purpura was noted in six cases, and a pemphigoid eruption in four. Erysipelas complicated the later stages of the fever twice; both patients recovered. There were forty-five cases of furunculosis, two of carbuncle, five of onychia, nine of subcutaneous abscess, one of impetigo, and one of infected sebaceous cyst. Striæ patellares were found in a boy of fourteen, who became very emaciated in a prolonged attack, and also in a middle-aged woman.—*The Hospital*.

Prophylaxis of Acute Anterior Poliomyelitis

Regarding the prophylaxis of such a disease as anterior poliomyelitis, Römer and Joseph in the *Münchener Med. Woch.* state that two forms of preventive treatment—the hygienic and the medicinal—must be taken into account. In hygienic prophylaxis the possibility of domestic animals, such as dogs and chick-

ens, acting as carriers must be remembered, as well as the part played by human beings in distributing the disease. The mode of transmission probably has many points in common with that of meningitis. According to some authorities, the specific organism, or poison, is to be found in the naso-pharyngeal secretions of both those suffering from the disease and of the apparently healthy, infection being caused by contact with these secretions. As the result of experiment, it has been shown that the virus remains active after drying for a month, so that dust may play a part in the dissemination of the disease. The authors have proved by experiment that exposure to the vapor of formaldehyde for seven and a half hours, as in the ordinary method of disinfecting a room, renders the virus inert when injected into a monkey. Therefore the room of a patient who has recovered from an attack should be disinfected in this way. The same precautions with regard to the nose and mouth of the patient and all coming in contact with him are to be observed as are the rule when dealing with other infectious diseases, such as diphtheria, etc. With regard to the medicinal part of the prophylactic treatment, much hope is placed in the use of the serum of an immunized animal. Since one attack renders an animal immune to a second, and the serum of an immunized animal has been shown to prevent the development of an attack in an inoculated one, there would seem to be grounds for believing that this hope will be realized.—*The Hospital*.

Glycyl Tryptophan Test for Carcinoma of the Stomach
 NEUBAUER and FISCHER. *Deut. Arch. f. klin. Med.* LYLE
 and KOBER. *New York Med. Journ.*

These writers speak well of this test; it depends on the fact that an enzyme occurs in stomachs affected with carcinoma which is not present under ordinary conditions, and that this enzyme can break up the peptide glycyl tryptophan so as to free tryptophan while normal gastric contents cannot do this. An ordinary test breakfast is given and 10 c.c. of the filtered contents is incubated for 24 hours with a little glycyl tryptophan and enough toluol to form a layer on the surface. Then to about 3 cc. drawn off by means of a pipette and placed in a test tube is added some drops of 3 per cent. acetic acid. Then bromine vapor is allowed to fall in till there is a slight layer over the fluid. The tube is next shaken. A pink color shows the presence of free tryptophan. If no pink color appears more vapor is

added with further shaking. And this process is repeated till the pink color of a positive reaction appears or till the fluid becomes brown with bromine; in the latter case the test is negative. The bromine is added cautiously, for an excess may bleach a slight pink color which would otherwise have been present. If the gastric contents are acid they are neutralized as soon as they are drawn off from the stomach, as the carcinoma ferment is killed by an acid medium. Glycyl tryptophan may be obtained set up in capsules with toluol for this test from the firm of Kalle & Co., Biebrich a. Rhein.

Various fallacies have been suggested. (1) The presence of tryptophan in the stomach contents, derived from food. Normal gastric juice can certainly not break up proteins beyond the peptone stage, but there is some evidence to show that in carcinoma a further stage of digestion can take place. (2) The presence of peptide splitting bacteria. These would act probably to some extent, but the toluol present completely inhibits their action. (3) Reflux of pancreatic juices such as has been shown to occur where much fat is present in food. This fluid will vitiate the result for trypsin can split up proteids to amino acids such as tryptophan. It is not an easy matter to test for its presence; the most simple and satisfactory way is to judge it visually by the presence or absence of bile pigment. If there is doubt as to whether the bile color is present, the bromine test may be carried out, but in case it is positive further test meals should be given till one is obtained where no bile is present. (4) Presence of blood. Some ferment in blood breaks up the glycyl tryptophan, and as this ferment is present in the serum as well as in the corpuscles filtration is of no avail. Before incubating, therefore, it is necessary to try one of the color tests for blood. Lyle and Kober consider that no error arises here if blood is more dilute than 1 in 1000.

Neubauer and Fischer got in normal cases 4 negative results, in gastric ulcer cases 10 negative, in other non-malignant gastric cases 12 negative, in definite carcinoma of stomach 1 negative and 5 positive, in clinically certain carcinoma cases 1 negative and 12 positive, and in suspicious malignant cases 4 negative and 6 positive results.

Of Lyle and Kober's eleven cases where the diagnosis was proved, five in which there was carcinoma of the stomach gave positive results, one gave varying reactions (two positive and one negative), and five in which there was no carcinoma of the stomach gave negative results.

It is worthy of note that if occult stomach hæmorrhages are as of common occurrence in carcinoma as is stated, they would occur too frequently to allow this test to be of any great value.—*Medical Chronicle*.

The Adductor Reflex. KELLER. *Deutsche Zeitschr. f. Nervenheilk.*

The adductor reflex, which may be evoked by striking the internal condyle of the femur or the head of the tibia with a percussion hammer, is quite analogous to the other tendon reflexes. The extent of the area by percussion of which the reflex can be evoked is of more clinical significance than the strength of the muscular contraction that constitutes the reflex; when the tendon-jerks are diminished it can be obtained at the most from the upper third of the tibia, but when these are exaggerated, either from organic causes or in functional states, percussion of any part of the inner surface of the leg or even of the inner border of the foot may produce it. The increase of the reflexogenous zone is proportional to the exaggeration of the other tendon jerks of the limb. But the adductor reflex cannot be employed as an indication of disease of the pyramidal tracts, as Babinski's sign, as it may be as much increased in functional as in organic condition.—*Medical Chronicle*.

Cardiac Syphilis. SEARS. *Boston Medical and Surgical Journal*.

In this paper Dr. Sears lays stress upon cardiac syphilis as being very much more common than is generally supposed, and upon its fatality. Syphilis attacks the heart and vessels in a variety of ways; in rare cases it may set up acute endocarditis, which may or may not involve the valves. As a general rule the heart is affected secondarily to the aorta and statistics lend support to the view that mesaortitis productiva is almost always of luetic origin. It has long been realized that aneurysm of the aorta is, in the great majority of cases, a result of syphilis. Syphilis is one of the most frequent causes of pure aortic insufficiency, but the coexistence of other valvular lesions is strongly against syphilis as an etiological factor.

Gummata of the myocardium are rare, it being far more common to find diffuse fibrosis.

Clinically such myocardial infiltration is manifested in a variety of ways. There may be general signs of heart weakness,

or definite angina pectoris. If the infiltration is localized, there may be signs of cardiac aneurysm.

The early symptoms of cardiac syphilis are somewhat vague; Runeberg states that the most significant are the following: paroxysmal attacks of cardiac asthma or anginal pain; unequal or irregular heart contractions, muffled sounds, an indistinct pulse wave, occasional cardiac murmurs over the aortic area in some cases, and persistent and increasing heart failure with dilatation and hypertrophy. The heart failure resulting from syphilis is characterized by its intractability to treatment, and the way in which relapses occur after causes entirely inadequate when compared to rheumatic heart failure.

Patients with cardiac syphilis are liable to sudden death, or to rapid death with symptoms of mitral insufficiency.

Owing to the importance of treatment being instituted at an early stage, it is well to regard young patients who give no history of rheumatism or of the allied diseases as suffering from a cardiac manifestation of syphilis. The author advises the administration of mercury by injection.—*Medical Chronicle*.

Babinski's Sign in Diphtheria

Dr. J. D. Rolleston, in an article reprinted from the *Review of Neurology and Psychiatry*, discusses the question of the presence of Babinski's sign in diphtheria. His paper deals with a series of 877 cases of the disease in which the plantar reflex was investigated in the course of the last four years. In 172, or 19.6 per cent. of cases, an extensor response of the great toe, with extension or flexion of the other toes, was found to be present for varying periods. In 29 flexion alternated with extension, and in 676 the normal flexor response was obtained. In no case was there absence of any response. In no case again was strychnine administered, as the occurrence of the sign after large doses of this drug has been noted. From the author's analysis of his cases he comes to the following conclusions: (1) Babinski's sign is found in a considerable percentage of all cases of diphtheria, the character of the response being rapid, deliberate, or intermediate in character; (2) the extensor response in this disease is not confined to infants, but may be obtained, though with decreasing frequency and duration, especially after the eighth year, until adult life; (3) it is essentially a phenomenon of the acute stage, in most cases being replaced by flexion in convalescence. Transition stages often exist in which various forms of response

may be obtained; (4) the sign is not pathognomonic of diphtheria, since it occurs in other acute infections such as scarlet fever, typhoid, lobar pneumonia, etc., but it has a certain diagnostic value, since it is met with more frequently in diphtheria than in non-diphtheritic angina; (5) it is more frequent and persistent in severe than in mild attacks of the disease, and its presence has therefore a certain prognostic value; (6) it is not associated with any special condition of the tendon jerks, and is never accompanied by ankle-clonus; and (7) it is probably due to a transitory perturbation of the pyramidal system by the circulating toxins, comparable to the slight degree of meningeal reaction which is a frequent occurrence in acute infections.—*The Hospital*.

Hyperthyroidism

Hyperthyroidism, says Pitfield, *New York Medical Journal*, may be so mild as to cause a few pains and aches, or so severe as to render the victim a bedridden, neurasthenic invalid; ugly, perhaps, and miserable; and often a complete puzzle for the medical attendant. Not always is the patient myxedematous. He or she may be so far advanced in the disease that the atrophic form obtains with emaciation and cachexia, so extreme that no subcuticle tissue, save bones and muscles, remain. Or the disease may be so slight that almost no skin changes are apparent, as in the cases reported by Pitfield. In fact, the patient may be rather fair to look on and yet have so many nervous symptoms as to be miserably ill, and in the eyes of many doctors a nervous, rheumatic crank.

Pitfield has seen in all nine cases in private practice. One patient was so myxedematous that she and her family preferred that she should not appear in public places, because she attracted the attention of nearly everybody by her hippopotamus gait. Two other patients were merely fat looking with puffy faces and swollen eyelids; one was a cachectic, prematurely old and withered-looking woman invalided for years, in whom there was but little suggestion of myxedema; two were comely, handsome women, one 35 and the other 53 years of age; another a thin, nervous little woman, a familiar type, with many ills and no myxedema. All had several things in common. All had had children. All had joint pains that were called rheumatism. The fat ones were all thought to have nephritis, the thin ones nervous prostration. And all without exception had had a galaxy of doctors who had misdiagnosed their ills.

Any woman approaching middle life or in the fourth decade,

who has had a history of backache, an occipital headache, together with joint pains, dyspnea, asthenia, should be suspected of having hyperthyroidism, especially so if she has amenorrhea or had had it during the menstrual life. The treatment consists in the administration of thyroid extract.—J. A. M. A.

Encapsulated Pleural Effusions

Fraenkel, *Therapie der Gegenwart*, remarks that diaphragmatic pleurisy causes insignificant symptoms when the encapsulated effusion is of slight extent—merely a big blister—but the pain may be considerable, with much tenderness at certain points, especially at the intersection of a line continuing horizontally the tenth rib with a vertical line continuing the outer margin of the sternum. The epigastrium may also be tender and the tenth and eleventh interspaces, and there may be a particularly sensitive point close to the spine. Pressure on the phrenic nerve in the neck is also liable to be painful. Besides these radiated pains there is sometimes pain in the stomach and pain as what is swallowed passes the diaphragm and, likewise, pain in the region of the diaphragm during coughing. Hiccough and vomiting are also liable to occur from reflex action as the food passes the diaphragm. A reflex contraction of the abdominal wall at the close of a deep inspiration may also be observed. When the mediastinal pleura was involved there was a sudden stormy onset of symptoms in the 6 known cases of this kind; high fever, the disturbances restricted to one side, and the affection leading to a small accumulation of pus, which generally perforated into the bronchi. The symptoms are those natural from compression of the vagus and recurrent nerves, air passages or esophagus. An encapsulated interlobar effusion may be of small amount or up to a pint or quart of effusion or pus; it generally is most evident along the axillary line from the fourth to the sixth interspace, where it is most readily reached by the needle. When it increases in amount, threatening symptoms on the part of the lungs and heart are possible. Puncture may not locate the effusion, and the compression of the air passages and heart may suggest a tumor, but radiography will confirm the assumption of an interlobar effusion based mainly on the pallor, persisting fever and resonance over the right upper lobe. Putrid empyema is generally secondary to a gangrenous process in the lung, he says, but he has met with a case in which a traction diverticulum of the esophagus was the primary trouble. He adds that these traction diverticula are common, but are easily overlooked at autopsies.

OBSTETRICS AND GYNECOLOGY.

IN CHARGE OF ADAM H. WRIGHT, K. C. M'ILWRAITH, FRED. FENTON
AND HELEN MACMURCHY.

The Nature of Erosion of the Cervix

Editor British Medical Journal:

SIR,—In your brief preliminary report of the discussion which followed Professor Gottschalk's lantern demonstration of the microscopical appearances of erosions of the cervix, at the annual meeting of the British Medical Association, the following remarkable sentence appears: "It was pointed out to Professor Gottschalk that the term 'erosion' does not to the British gynecologist imply any adenomatous growth as it seems to do in Germany." If your reporter had used the word "English" instead of "British" I should not feel called on to correct him, but even then it appears that he would be wrong.

I take Drs. Bland-Sutton and Giles' "Gynecology" as representative of English opinion; I take Drs. Hart and Barbour's "Gynecology" as representative of Scotland; and for want of a better, I take my own as representative of Ireland. In the first-named I read of "Adenomatous disease (formerly called *erosion*) of the cervical endometrium." In the second-named I read, "The raw-looking surface" (of erosions) "is therefore a *newly-formed glandular secreting surface*, resembling in structure the cervical mucous membrane." In the last-named I read, "The altered tissue" (of an erosion) "closely resembles the structure of an adenoma, and consequently, the condition is sometimes described as an adenoma of the cervix."

I, for one, was certainly of opinion that no other view than that contained in these extracts was held by "British" gynecologists, and I should be very interested to learn who was Professor Gottschalk's instructor. It is a pity that we should appear to be more ignorant than we really are.

I am, etc.

HENRY JELLETT.

Dublin, Aug. 10th.

Editor British Medical Journal:

SIR,—When the full report of the discussion on Professor Gottschalk's demonstration before the Gynecological Section, at the recent annual meeting of the British Medical Association is

published, Dr. Jellett, whose letter appears in your issue of August 20th, will see that the brief account in the *British Medical Journal* of August 6th is not only incorrect, but in fact diametrically opposed to what took place.

As the matter has been given such prominence, and as I was the so-called "instructor," perhaps you will kindly allow me to put the matter right in a few words.

Professor Gottschalk gave a very lucid demonstration of a series of photomicrographs of what he called "erosion" of the cervix, and of what he considered the transition stage, and the complete transformation of this condition into carcinoma.

I pointed out that the sections represented instances of *chronic cervicitis*, with one (I think) exception, which was a carcinoma; and that they certainly were not examples of what British gynecologists had in the past termed "erosion," which is a definite adenoma, and should be known by that name.

An intermittent discussion followed between Professor Gottschalk, Professor Nagel, and myself, during which diagrams were drawn, and the whole matter threshed out. There is, however, no need to trouble you with the details.

Subsequently Dr. Comyns Berkeley and the president stated that I had fairly represented the view of British gynecologists, namely, that the condition is adenomatous; and they pointed out that if the views of Professor Gottschalk and Professor Nagel represent those generally held in Germany, then the term "erosion" was applied in that country to a different condition from that known by the same name in the United Kingdom. Consequently, it was suggested that this term (erosion), which is certainly a bad one, ought to be dropped entirely. I did not think anyone present remained in doubt at the end of the discussion as to the relative views held by the speakers; but I believe your reporter's error was due to some delay on my part in forwarding the notes on which he had intended to rely for a correct interpretation of what was said.

I am, etc.,

W. BLAIR BELL.

Liverpool, Aug. 20th.

Forceps Operations

Forceps operations, especially, are undoubtedly undertaken with too great frequency. It is common to meet those who use instruments in 10, 20 or 30 per cent. of their deliveries, or even

in a larger proportion, so frequent are the indications for interference in their practice. How often these indications are their own creation they do not state. Nor do they confess how frequently they are influenced by a desire to curtail the dreary time of waiting at the bedside, or are inspired by a humane desire to cut short the sufferings of the patient.

To give an idea of the frequency with which forceps are used in various European hospitals, I quote the following list, compiled by Wahl: Von Walla, Budapest, 1882-1895, 1.04 per cent.; Kezmarszky, Budapest, 1874-1882, 1.4 per cent.; Abegg, Danzig, 1872-1885, 2.2 per cent.; Leopold, Dresden, 1879-1885, 2.56 per cent.; Gusserow, Berlin, 1882-1886, 2.66 per cent.; Ahlfeld, Marburg, 1881-1888, 3.5 per cent.; Von Rosthorn, Prague, 1891-1894, 3.63 per cent.; Braum, Wien, 4.3 per cent.; Fehling, Basel, 1887-1893, 5.33 per cent.; Von Saxinger, Tübingen, 6.5 per cent.; Schauta, Innsbruck, 1881-1887, 9.16 per cent.; Schultze, Jena, 11.6; Von Winckel, München, 1884-1890, 22.6 per cent.

These figures, taken from teaching institutions, represent a higher percentage of indications than actually existed, for in many instances the instruments were used, where they were not necessary, in order to give instruction to students. Taking this into consideration, it is indeed striking that the percentages are so low. As more difficult cases occur in maternity practice than in private, it is very evident that the necessity for instrumental delivery in private practice must be very small.

The risks attendant upon the use of instruments are well recognized by those who are experts in applying them, and who cannot avoid them in a considerable percentage of cases, even by the exercise of marked skill and judgment. Too frequently among those who are not experts and do not work with scientific knowledge, is found a disregard of these dangers. One occasionally hears experienced practitioners boast of the hundreds of women they have delivered without mortality. They do not think of the stretching and tearing which they do not see, and make light of those which are visible, unless of the most severe nature. As long as a patient does not die from hemorrhage or sepsis, the labor is considered satisfactory. Responsibility for a long list of mechanical and infective troubles which follow the disregarded lesions is not shared by them.

As a gynecologist, I cannot too strongly emphasize, among the etiological factors concerned in the production of women's diseases, those which arise from injudicious and meddlesome interference with the normal parturient process.—J. CLARENCE WEBSTER, *Buffalo Med. Jour.*

Pregnancy and Diabetes

H. Neumann (*Berl. klin. Woch.*) discusses the relationship between diabetes and pregnancy, and comes to the conclusion that the rareness of the coincidence of the two conditions can readily be explained. Diabetes is a comparatively rare and a very severe disease in young persons. It is much more common in men than in women. Women of a marriageable and child-bearing age are therefore not frequently affected by it, and of those who are so affected, the majority are too ill to think about getting married. Further, he points out that only a small proportion of those who would get married under these circumstances would be likely to conceive, on account of the reduced condition of their bodies. He points out that some cases arise during pregnancy, or after marriage, in response to nervous affections. On subjecting these and other cases to a critical analysis, he finds that the diabetes occurs as an accidental accompaniment to the pregnancy, and although the cases may end fatally at childbirth, this is by no means necessary. In conclusion, he finds that although diabetes and pregnancy rarely accompany one another, it is necessary to forbid girls who are suffering from diabetes to marry, on account of the very bad prognosis of this disease when it affects women of a childbearing age. When a married woman is found to have diabetes mellitus it is necessary to instruct her to avoid conception. Pregnant diabetic women or pregnant women who are excreting glucose should be kept under strict medical control and placed on an antidiabetic diet. Operative interference of pregnancy in a diabetic woman should not be undertaken, unless some other indication calls for such a procedure.

Disadvantages of Conservative Caesarean Section

Couvellaire (*Ann. de gynéc. et d'obstét.*, November, 1909) condemns the routine practice of conservative Cæsarean section. In a critical analysis of reported results in the clinics of the advocates of this operation, he shows that repeated Cæsarean sections on the same patients have not been followed by so favorable results as many have maintained, whilst sterilization has been practised in many instances by the same operators, who were thus compelled ultimately to defeat the object of the conservative operation. He concludes that there is always one danger after convalescence, and that lies in the uterine wound. Its cicatrix remains as a permanent line of fibrous tissue, which

can never become muscle fibre, so that the perfect musculature of the uterus, absolutely essential for natural labor, is spoilt. The cicatrix is always liable to yield during a future pregnancy or labor. Couvelaire reminds obstetricians who talk about the "good surgery" principle said to be manifest in those who save the uterus in all cases that the surgeon who sutures the intestine, stomach or bladder has not to take into account this special danger attending suture of the uterus. Conservative section cannot be indefinitely repeated, cases performed for the third or fourth time with satisfactory results are exceptions, for, as a rule, later operations are liable to bad post-operative complications, hence the frequent necessity for sterilization. Indeed, Couvelaire concludes his summary, after declaring that it should only be attempted in very carefully selected cases, by saying that sooner or later Cæsarean section must have as an inevitable corollary—sterilization. He adds some instructive drawings showing the Cæsarean cicatrix in uteri ultimately removed by Porro's operation.—*Brit. Med. Jour.*

The Eclampsia of Labor

Rudaux (*La Clinique*, April, 1910) advanced the view that eclampsia met with during labor is of a special type, that it differs from the eclampsia of pregnancy in its pathology and in its clinical manifestations, and that it is not a disease but a symptom produced by absolutely different causes. He reports the case of a young primipara with strong neuropathic tendencies. During her pregnancy frequent examination showed the urine to be free from albumen, and the daily amount passed did not fall below one and a half pints. Labor occurred at term, and was perfectly normal, lasting about twelve hours, the patient being kept more or less under chloroform during one hour. Twenty minutes after delivery, without any warning, she had a convulsive seizure of the clonic type, which lasted for two minutes. She gradually recovered consciousness, but half an hour later a second attack occurred, leaving her in a somnolent condition. Eight similar attacks occurred during the day, the patient becoming profoundly comatose. Catheterization of the bladder produced a very small quantity of urine, which was dark in color and contained albumen. The treatment included absolute quiet, irrigation of the intestine, chloroform during the crises, an injection of 3 grams of chloral (repeated thrice in

twenty-four hours), and only water to drink. As the blood pressure was not much increased venesection was not attempted, but the loss from the womb was more than usually abundant. The next day the crises had ceased, and her condition had improved, although the blood pressure was still above normal, and there was general drowsiness. A pint of urine drawn off with the catheter showed a very small trace of albumen, which disappeared on the third day, when micturition became normal. On the sixth day she had an attack of pyleonephritis of the right kidney, which cleared up under urotropine, her subsequent recovery being satisfactory. In this case there were no prodromal symptoms; the attack came on suddenly, the bladder being practically empty and the albuminuria disappearing in a few days. Eclampsia of this type must be regarded as one of the accidents of labor which can neither be foreseen nor prevented.

Editorials.

THE DEAF CHILD

Mr. Macleod Yearsley, F.R.C.S., Senior Surgeon to the Royal Ear Hospital, and Medical Inspector of the London County Council Deaf Schools, is the author of the opening article in the *British Journal of Children's Diseases* for August. The article is, in substance, a lecture which was originally delivered at the London Polyclinic, and is on the subject of "The Duty of the General Practitioner to the Deaf Child." Mr. Yearsley, who, it is well known, is one of the few men who has attained in the early prime of life to an enviable and authoritative position among the specialists of the metropolis, has given himself with enthusiasm to that great new field of preventive medicine (one might almost say patriotic medicine) opened by the action of the educational authorities in establishing medical inspection of schools. At the recent International Congress of School Hygiene at Paris Mr. Macleod Yearsley was one of the foremost helpers, and also distinguished himself in the battle royal waged between those who did or did not want, as the case might be, to exclude specialists from the schools. where his knowledge, his experience, freshly-gained in the schools where he had done such admirable work, and his ready wit, made him an almost invulnerable opponent. In the lecture in question the author points out that deaf persons, and especially deaf-mutes, have often been neglected by the general practitioner. He observes that, were he asked what is the greatest advance which has marked otology during the past ten or fifteen years, he would unhesitatingly reply that it is the fact that the greatest cause of ear disease lies in the nose and naso-pharynx. He goes on to prove that nasal obstruction is equivalent to eustachian obstruction, and that the real orifice of the eustachian tube lies at the outer nostril. He refers later on to the connection between gastric derangement and adenoids, and describes a case of his own, the patient being a little seven-year-old girl who suffered from dys-

pepsia, morning nausea and vomiting, which disappeared entirely after the removal of a large mass of adenoids. After dealing with the details of the operation for adenoids, and also referring at some length to the exanthemata, meningitis, congenital syphilis and mumps, from the aurist's point of view, Mr. Macleod Yearsley concludes a very valuable article by a brief but pointed reference to the duty of discouraging consanguineous marriages, inasmuch as something like 50 per cent. of the cases of congenital deaf-mutism are either (1) amongst those who have cases, either direct or collateral, in their families, or (2) amongst those who are blood relations, and, further, to the duty of parents to provide proper teaching by the oral method for deaf children, and teaching the child at home "as a *speaker* and not a *signer*."

HOSPITAL FOR THE FEEBLE-MINDED IN ORILLIA

Mr. Joseph P. Downey, of Guelph, formerly a member of the Ontario Legislature, has been appointed Superintendent of the Hospital for Feeble-Minded in Orillia. Some objection has been raised to this appointment because the new Superintendent is not a physician. From this standpoint it happens fortunately that Mr. Downey as a layman has taken a remarkable and very intelligent interest in the medical aspects of public questions, as, for instance, the prevention of tuberculosis and a proper supervision over foods. This, however, does not happen to make him fit for a position where a medical expert is required.

On behalf of the Government, the Provincial Secretary tells us that he and his confreres had decided on a reorganization of the Orillia Hospital, their idea being to place a layman in charge of the administration of the business of the institution, and in addition to place a medical director and suitable assistant, these two physicians to devote themselves exclusively to the medical side of the work. He says that in adopting this plan they are following the methods in vogue in some of the best institutions in the world. Mr. Hanna referred particularly to two of the

principal and most modern institutions in England for the treatment and care of the feeble-minded, one located at Sandlebridge and the other at Starcross, each presided over by a layman with a medical officer and staff in charge of the medical treatment of the patients. In another portion of this issue it will be noticed that Dr. MacMurchy visited and studied carefully the methods in each of these institutions.

Without any extended comment at present we may say that the appointment of two capable medical men ought to be satisfactory to the public and profession of Ontario.

THE CRIPPEN CASE

From a medico-legal standpoint the celebrated Crippen case is furnishing interesting developments. After the disappearance of Crippen's wife several months elapsed before the Scotland Yard detectives could obtain sufficient evidence to found a charge of murder against Crippen. At a certain time portions of the remains of a human body were found beneath the cellar floor in his house. Various rumors have arisen as to the said remains. At the time of writing we are told that the lawyers for the defence are trying to show that it is not possible to distinguish sex in the remains. Prof. Pepper, of the London University, stated in his evidence that the remains were those of a middle-aged adult that had been buried four months. Crippen was born in Coldwater, Mich., and his wife, known in England as Belle Elmore, was born in Brooklyn, N.Y., her maiden name being Cora Belle Makomaski. Crippen, who has passed as a doctor in London for some years, appears in the medical directories of the United States to be a graduate of the Homeopathic College of Cleveland, Ohio, 1884. In 1886 his address was 8 Madison Ave., Detroit. In 1890 his address was 955 Fifth St., San Diego, Cal. In 1893 he is supposed to have had for his address 78 Maiden Lane, New York, and in 1896 he lived in Philadelphia. He left Philadelphia early in 1897 and went to London, Eng., where he became physician for a quack concern

known as the Drouet Institute for the Deaf. After some temporary success from a money standpoint, the institute failed. Crippen then conceived the idea of running a similar concern under another name, and he established what was called the Aural Remedies Company, with what he called his "special absorbent treatment." After a time this company got into trouble, and the whole concern was designated by a noted British Judge, Mr. Justice Matthew, as a disgraceful institution carried on for an unworthy object by discreditable means.

BABY SHOW AT TORONTO EXHIBITION

A baby show is generally supposed to be an exhibition of babies with prizes for the best-looking. It was quite a surprise to many spectators at the baby show conducted by the Programme Committee of the Labor men at the Toronto Exhibition that good looks was only a single element in the requirements of the little prize winners. The following matters were considered in each case by the judges: general appearance as to health and good looks, absence of physical defects, cleanliness, neatness of dress, proper proportion as to height, weight and figure.

The physicians who acted as judges showed an intelligent interest in their difficult work which was both admirable and surprising. The reports and comments in the lay press showed that the public took more than a passing interest in the events.

The simple fact that perfect health was the main consideration was evidently highly satisfactory to the majority. It seemed to create a new line of thought as to good looks or otherwise in babies. If health and strength are the main points, it seems desirable that mothers should make a special effort to assist nature while their babies are growing into girlhood and boyhood. While many were considered, the choice announced was ten or twelve best boy babies under one year of age, called the "top notchers."

The next question which might naturally arise was what sort of food was given to the older babies, and how was the food

administered. We believe that many of the mothers and their friends would be very glad to get information as to the best methods of feeding children in their second and third years.

It is probable that this "show" will be repeated at future Exhibitions, and that it will become a great educator in many respects. If so it will certainly be a great improvement on the "baby show" which in times past was conducted chiefly with the aim of furnishing amusement for the onlookers.

UNDESIRABLE IMMIGRANTS

We understand that numerous items have appeared in the press of Great Britain, and many have been cabled from there to the press of Canada, commenting unfavorably upon the present Canadian immigration regulations. The adverse criticism has been directed almost exclusively to two regulations.

The first of these requires immigrants coming to employments other than farm work or, in the case of females, to domestic service, to have in their possession at the time of landing the sum of \$25 in addition to railway transportation to their ultimate destination. From a medical standpoint we are not particularly interested in this regulation, but it seems reasonable that immigrants who come into the country should be required to have some money in addition to the bare price of a railway ticket from the steamer to their place of destination.

The second regulation requires that the consent to emigrate to Canada shall be given only to such as are suited for, willing to accept, and have assured employment at farm work. This provision is intended to regulate charity-aided immigrants from England to Canada largely. From a medical and physical standpoint we think this regulation is exceedingly important and should be strictly adhered to by the authorities at Ottawa. We think at the same time that it is a regulation that ought to apply to the good sense of all intelligent people in the British Isles. It is too late now to advise us to receive in Canada without

question the imbeciles or physically incompetent from any country, but, apart from any question of political economy, we think it is both foolish and cruel to send from one country to another people so weak physically and mentally that it is impossible for them to earn a living in their new environments. Surely it is better for such unfortunates to be kept at home.

THE TREATMENT OF FEEBLE-MINDED PEOPLE

Dr. Helen MacMurchy, of Toronto, returned Sept. 1st from a trip to Europe. While in England and on the Continent she was engaged in securing information for the Government of Ontario as to the best methods of treatment of the feeble-minded. She visited an institution at Sandlebridge, where the young men are under the charge of a farm superintendent, who teaches them methods of working on farms. In the same institution the young women are trained by an experienced housekeeper as to things pertaining to home life. She also visited Starcross, near Exeter, Eng., where the feeble-minded inmates are instructed in various trades.

While in Paris Dr. MacMurchy was elected a member of the Permanent Council of the International Congress on Hygiene, being proposed by Sir Lauder Brunton, of England. She was the first woman to be selected for this high honor.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS

We understand that the twenty-third annual meeting of this very vigorous Association, which was held at Syracuse, N.Y., Sept. 20-22, was one of unusual interest. Among those who took an active part were the President, Dr. A. B. Miller, Syracuse, the Mayor of Syracuse and the Dean of the Medical Department of Syracuse University. Three interesting papers were read on uterine cancer. Dr. Walter B. Chase of Brooklyn

and Dr. Isadore Sanes both referred to the great importance of early diagnosis and early treatment. Dr. Chase thought that an appeal should be made to the public for the establishment of homes or hospitals in all communities for the surgical care and skilled nursing of poor women afflicted with uterine cancer.

Dr. Chas. E. Congdon, of Buffalo, in a paper on ectopic gestation, agreed with the majority in considering that it was practically always tubal; at the same time he considers that it has been clearly proved that there are certain exceptions. He considered that diagnosis before rupture is even more difficult than has been generally supposed, and that in many cases inflammatory or neoplastic conditions have been incorrectly supposed to be ectopic sacs.

Dr. Henry Schwarz, of St. Louis, read a very interesting paper on puerperal septicemia. After giving a historical review of child-bed fever he discussed the treatment, especially by serum therapy and bacteria vaccines. He considered that local puerperal infections generally recover under rational treatment; there was, therefore, no excuse for experimentation with serum or vaccines in such cases. Generally, pyemia and general sepsis have a high mortality. No known antistreptococci serum manifests a curative influence with any degree of regularity; however, its administration is harmless and it does good in certain cases. Further experimentation on animals is desirable. He expresses the opinion that streptococci vaccine can only do harm in these cases.

The blood already contains billions of streptococci, and millions of these die, whereby certain toxins are set free, causing the formation of all the specific antibodies the patient is able to furnish. The introduction of a few millions of killed streptococci under such circumstances can do no good, but may do great harm by lowering the resisting forces of the body.

The subject of Cæsarean section was considered by three surgeons. Dr. Henry Carstons, of Detroit, read a report of a Cæsarean section in a patient where the pregnant uterus was within an umbilical hernia. Dr. Wm. Humiston, of Cleveland, discussed the high operation in Cæsarean section, and Dr. Asa

B. Davis described the operation by the small median incision above the umbilicus. Dr. Herman Hayd, of Buffalo, wrote a paper on intususception in infants. He expresses the belief that this condition is much more common than is usually supposed, because of ignorance and carelessness in first examination. Diagnosis should not be difficult, as the symptoms and history are frank and dramatic in their onset, although frequently too much importance has been placed upon the presence of the sausage-shaped tumor. Early surgical treatment is urgently required. Dr. Jno. B. Murphy, of Chicago, read a paper on radical treatment of procidentia uteri and prolapsus recti. He referred to the many operations which have been advised for complete procidentia of the uterus, and considered that some had been materially successful; the uterus had been frequently sacrificed, with an occasional good result. He thought, however, that in this case the perineal muscles and crowded ligaments could not give sufficient support. He therefore performed a certain operation by which he fixed the uterus extraperitoneally with satisfactory results. The technique is simple, and relapses cannot occur. Dr. A. Van der Verr, of Albany, read a very interesting paper on the work which has been accomplished by the association. He gave the reasons for the organization of the association, and referred to certain actions of the Congress of American Physicians and Surgeons. Dr. Wm. H. Taylor, of Cincinnati, was the first president. He gave an outline of the general work that had been done and the discussions which had taken place in connection with abdominal surgery, pelvic surgery and obstetrics. He referred to the happy fact that discussions, as a rule, had been remarkably sharp, keen, and beneficial to those in attendance; at the same time the Fellows had always shown the highest professional respect for one another.

ONTARIO MEDICAL COUNCIL

The Registrar of the College of Physicians and Surgeons of Ontario, Dr. J. L. Bray, has sent out an official notification respecting the coming election of members of the territorial

divisions. Nominations will be received by the returning officer of each division up to 2 o'clock p.m. Nov. 14th. The ballots will be opened and counted by the returning officers Dec. 6th.

At the last election there were four contests in the 17 divisions then existing. The following were elected by acclamation: Division No. 1, Dr. J. L. Bray. When Dr. Bray was elected Registrar of the College Dr. C. W. Hoare, of Walkerville, was elected in his place, also by acclamation. 3, Dr. McArthur, London. 4, Dr. J. A. Robertson, Stratford. 6, Dr. Henry, Orangeville. 7, Dr. P. Stewart, then living in Hamilton. When Dr. Stewart ceased to be a member because he left the division and settled in Guelph, Dr. H. S. Griffin, of Hamilton, was elected in his place. 8, Dr. H. S. Glasgow, Welland. When Dr. Glasgow died Dr. Merritt, of St. Catharines, was elected in his place. 10, Dr. E. E. King, Toronto. 12, Dr. H. Baseom, Uxbridge. 13, Dr. S. C. Hilliar, Bowmanville. 14, Dr. M. E. McColl, Belleville. 15, Dr. W. Spankie, Wolfe Island. 16, Dr. J. Lane, Mallorytown. 17, Dr. W. O. Klotz, Ottawa.

In Division 2 there was a contest between Dr. John Mearns, Woodstock, and Dr. J. H. Cormack, of St. Thomas, Dr. Cormack being elected. Dr. Vardon, of Galt, defeated Dr. L. Brock, of Guelph, in Division 5. Dr. R. J. Gibson, of Sault Ste. Marie, defeated Dr. Aylesworth, of Collingwood, in Division 9. In Division 11 there were three candidates, Dr. A. A. Macdonald, a former member, Drs. J. S. Hart and B. L. Riordan, all of Toronto, Dr. Hart being elected. It is rumored that in the coming election there will be opposition to Dr. J. A. Robertson, of Stratford, Dr. J. Henry, of Orangeville, Dr. A. E. McCaul, of Belleville, Dr. Edmund E. King, of Toronto.

Notes

MEDICAL COUNCIL ELECTION

The nomination papers for members of the Medical Council of Ontario must be in the hands of the Returning Officer for each division by Monday, November 14th, at 2 p.m., and the voting papers by Monday, December 5th, 1910, at the same hour.

By order.

J. LANE, *President*.

J. L. BRAY, *Registrar*.

The following resolution *re* Dominion registration was adopted by the Alberta Medical Association at Banff, August 11th inst.: "Your Committee on Legislation beg leave to recommend that in the opinion of this Association it would be in the best interests of the medical profession, not only of this province, but of the whole Dominion, that Dominion registration be brought about as soon as possible by the adoption of the Canada Medical Amendment Act, 1910." Carried.

REUNION OF MEDICAL CLASS '92

The Class of '92 in Medicine, of the University of Toronto, held their second reunion in Toronto, Sept. 8th, 1910. On the evening of that day they had a banquet at the Toronto Club. Dr. H. A. Bruce presided, and the guests of honor were Dr. Adam Wright and Dr. Frederick Fenton. Among those of the class present were: Drs. R. J. Forrest, Port Hope; J. A. Hershey, Owen Sound; J. R. Smith, Grimsby; E. G. Smith, India; H. J. Way, Chicago; T. H. Middleboro, Owen Sound; J. A. Evans, Allandale; R. H. Green, Embro; William Crawford, Hamilton; George Bowles, D.A. Clark, J. N. E. Brown, Toronto.

It was decided to hold the next reunion with the class of Trinity of '92 in 1912, and the following officers were elected: Honorary President, Dr. Adam Wright; President, Dr. H. J. Way; Vice-President, Dr. F. Fenton. The Executive Committee will be composed of the members of the class living in Toronto.

TYPHOID FEVER IN TORONTO

More deaths have occurred from typhoid fever in Toronto up to the middle of September of this year than in any previous year since 1900. The following is the record of deaths for ten years:

1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910
21	23	25	35	41	40	63	53	61	79	107 to
										Sept. 15

The increase in recent years is due almost entirely to the impurities of the water, due to pollution with sewage. The great increase this year is due in part to the epidemic which occurred early in the year, there being 62 deaths in the first three months, *viz.*, January, February and March, and there seems to be no prospects of any betterment until the sewage works are completed. At the time of writing we are told by the City Medical Health Officer that our water is good, but warned at the same time that in a short time, especially during the equinoctial storms, that the water will be bad. The Public Analyst may tell us that the water is pure to-day, but he cannot tell us what it will be to-morrow. The only safe thing, therefore, for the citizens of Toronto for the next two or three years will be to boil all the water which is used for drinking purposes.

Personals

Drs. J. M. McCallum and S. Cummings, of Toronto, sailed for Europe Sept. 17th.

Dr. F. A. Cleland, who confines his work to gynecology only, has removed to 57 Bloor Street East, Toronto.

Dr. Helen MacMurchy has been appointed inspector of girls and Dr. Wilmot Graham inspector of boys in the Public Schools of Toronto.

Dr. F. Arnold Clarkson returned to Toronto, Sept. 7th, after a trip to England and the Continent. He spent a good portion of his time at work in the hospitals at Vienna.

Dr. J. Harvey Todd, radiographer, Toronto General Hospital, and member of the American Roentgen Ray Society, has removed his laboratory for radiography and radiotherapy to 163 College Street, Toronto.

Dr. J. N. E. Brown of the General Hospital, Dr. Beatty of Grace Hospital, and Miss Brent of the Sick Children's Hospital, Toronto, attended the meeting of the American Hospital Association at St. Louis, Mo., Sept. 20-1-2.

The following have been elected by acclamation as the representatives of the Graduates in Medicine in the Senate of the University of Toronto: Wm. Burt, M.B., Paris; Herbert J. Hamilton, M.D., Toronto; Augusta Stowe-Gullen, M.D., Toronto, and C. J. Hastings, M.D., Toronto.

LOST.—A post mortem case, made by Colin, Paris. This set was borrowed a few months ago and never returned. A suitable reward and certificate of honesty will be made on its return. If the party forgets to whom it belongs, communicate with THE CANADIAN PRACTITIONER AND REVIEW and no questions will be asked.

A large and lucrative practice in the city of Toronto for disposal. The doctor is called to the far east in a professional capacity that will necessitate his remaining many years, and before going can give a personal introduction for about three months. The house and office is situated in the choicest locality, and the opportunity is one seldom met with. "Box A," CANADIAN PRACTITIONER AND REVIEW.

Obituary

ISAAC WOOD, M.A., M.D. M.R.C.S. (Eng.), F.O.S. (Edin.)

On Monday, August 20, Dr. Isaac Wood, of Kingston, had a stroke of apoplexy which caused paralysis of the right side. On the same day he had been at active professional work, and had performed an operation for appendicitis at the General Hospital. He remained unconscious until his death, August 24th.

Dr. Wood was born in the County of Grenville in 1853, and was 57 years of age at the time of his death. In early manhood he became a public school teacher, and then the principal of a business college. He then took a course in Arts and Medicine in Queen's, and graduated M.A. in '91, and M.B. in '92, after which he went to England, where he spent some time in London. He returned to Canada in '93, and settled in Kingston, where he was engaged in practice up to the time of his seizure. He was Professor of Pediatrics, and Assistant Professor of Obstetrics and Gynecology in Queen's Medical College.

WILLIAM HOWELL DRAKE, M.D.

Dr. W. H. Drake, the oldest physician in Essex County, died at his home in Windsor, Sept. 6th. He graduated M.D. from Victoria University in 1857. He lived and practised medicine in London for about forty-one years, and moved to Windsor twelve years ago, where he lived in retirement. Dr. F. P. Drake, of London, and Mr. F. A. Drake, barrister, of this city, are sons.

JAMES EDGAR SAWDON, M.D.

We announce with deep regret the death of Dr. J. E. Sawdon, of Listowel. He attended Trinity Medical College, and graduated M.D. from Trinity University in 1902. After practising a couple of years in Blind River he went to England, and, after a term of study in London, passed the "Double Qualification" examination. He settled in Listowel in 1908, and his prospects

were very bright. While away for a short summer holiday he saw, in consultation, a patient with smallpox, and shortly after contracted the disease. Reports came to his friends in Toronto that the attack was a mild one. Soon after came a telegram announcing his death, August 30th.

JAMES MOYSTON McCARTHY

Dr. McCarter, of Verona, Ont., died of appendicitis Sept. 15th, aged 37. He was operated on and appendicectomy was performed three days before his death at the Kingston Hospital. He graduated from the University of Toronto in 1896, and was House Surgeon in the Hospital for Incurables in that city during the following year.

RUFUS O. SNIDER, M.D.

Dr. R. O. Snider, 42 Carlton St., was found dead in his bed on the morning of September 16th. The cause of death was said to be heart failure. He was only 46 years of age, but had been in poor health for several years. He graduated from Trinity University in 1896.

JAMES E. THOMPSON, M.D.

Dr. James E. Thompson, formerly of Toronto, and a graduate of Baltimore Medical College, died suddenly at his home in Thrup, near Scranton, Pa., Sept. 18th, aged 28.

Book Reviews

The Diseases of the Nose, Mouth, Pharynx and Larynx. A text-book for students and practitioners of medicine. By DR. ALFRED BRUCK (Berlin). Edited and translated by F. W. FORBES ROSS, M.D. (Edin.), F.R.C.S. (England), late Civil Surgeon His Britannic Majesty's Guards Hospital, London; Assistant North London Hospital for Consumption and Diseases of the Chest; Clinical Assistant Metropolitan Hospital for Diseases of the Nose, Throat, etc.; assisted by Friedrich GANS, M.D. Illustrated by 217 figures and diagrams in the text, many of which are in colors. New York: Rebman Company, 1123 Broadway.

The usual text-book on diseases of the nose and throat seems to take it for granted that its readers are, or intend to be, specialists in that particular branch of medicine. The result is that the general practitioner has to hunt through pages of detailed matter which are as a rule of no interest except to the specialist. The present publication is one that will appeal particularly to the busy practitioner as well as the student. Methods of examination are particularly well described, so that one who has not been enabled to have special instruction can easily grasp what the author means. Some very fine illustrations and diagrams are used to exemplify this portion of the work.

In the descriptions of operations also the instruments are shown *in situ*, thus aiding one to appreciate the technique.

The translator is to be commended for the very clear English edition that has been produced; in fact the reading matter is much better arranged than many books of English or American origin. We know of no book on this subject that can be better recommended.

A Text-Book of Pharmacology and Therapeutics; or the Action of Drugs in Health and Disease. By ARTHUR R. CUSHNEY, M.A., M.D., F.R.S., Professor of Pharmacology in the University of London; Examiner in the Universities of London, Manchester, Oxford and Leeds; formerly Professor of Materia Medica and Therapeutics in the University of Michigan. Octavo, 744 pages, with 61 engravings. Cloth, \$3.75 net. Lea & Febiger, Publishers, Philadelphia and New York. 1910.

During the four years which have elapsed since the previous edition of this well-known work, pharmacology has made many advances, owing to the increased interest taken in this branch of scientific research all over the world. An enormous amount of new literature has appeared, and we are gradually becoming surer of the actions of an increasing number of drug stuffs. All this is in contradistinction to the earlier investigations of pharmacology, which left one in a hopelessly uncertain frame of mind, and tended to the abolition of drugs as essential factors in treatment.

This reaction tending towards confidence in the prescribing of a definite drug for a definite purpose is to be noticed in the present fifth edition, a great deal of which has been rewritten. The actions of digitalis, ergot and adrenalin, as learned from the new methods of investigating the human circulation, are fully given. The rôle of the organic compounds of arsenic in the treatment of trypanosomiasis, and a brief discussion of the antitoxins have also been included. Altogether, the book will be found to embody all that has been proved and accepted to date in the study of the action of drugs.

Heart Disease, Blood-Pressure and the Nauheim-Schott Treatment. By LOUIS FAUGERES BISHOP, A.M., M.D., Clinical Professor of Heart and Circulatory Diseases, Fordham University School of Medicine, New York; Physician to the Lincoln Hospital; late Chairman of the Section on Medicine of the New York Academy of Medicine; Member of the New York Pathological Society; Alumni Association, St. Luke's Hospital, etc. Third edition. New York: E. B. Treat & Company. 1909.

In the third edition of this book the author adds some further notes on the Schott treatment, writing from his personal observations at Nauheim. There are two parts to the book, in the first of which is taken up the question of heart disease and blood-pressure, and in the second, the Nauheim-Schott treatment. This latter is to be commended for the very thorough manner in which the treatment by baths and resisted movements is described. The various movements are shown in a series of excellent photographs, and one should have no difficulty in carrying out the treatment after reading this section. The closing chapter gives some clinical reports of cases as treated by the system, and cannot fail to leave one impressed with the undoubted value and efficiency of the Nauheim therapeutic procedures.

The Macs of '37. A Story of the Canadian Rebellion. By PRICE-BROWN, author of "In the Van," etc. Toronto: McLeod & Allen, Publishers.

It is the exception to find a Canadian physician who in his spare hours turns his efforts to the art of letters. It is a pleasure, therefore, to see, as we do from the book before us, that we have in our ranks men who, apart from their work, devote themselves, not to the stock market, but to building up a Canadian literature.

Canada is a young country, but, young as she is, she has a history, which we are too apt to forget. Dr. Price-Brown, in his story of the Rebellion of 1837, has introduced to us William Lyon Mackenzie, Dr. Rolph and others who were prominent in those stirring times. *Cherchez la femme* is no less true of the novel than of the latest scandal, and in this case the heroine is the daughter of a stern old Highlander, who lords it over a domain among the Thousand Islands of the St. Lawrence. As a literary effort the latter part of the book is better than the first, which shows a slight tendency to drag. When once launched into the midst of things, however, events move quickly enough. Anyone interested in the history of his own country should find the book very readable.

Selections

A Rapid and Delicate Method of Detecting Bile Pigment in Urine

The best known methods of detecting bile pigments in the urine depend upon the fact that oxidation leads to the production of pigments of different colors; the commonest is that with fuming nitric acid—Gmelin's test. It is well enough known, however, that even in cases of distinct jaundice it may be difficult to get a positive reaction for bile pigments in the urine, and if this is so in patients who are already known to be jaundiced it is still more likely to be so in those slighter cases in which incipient jaundice is suspected, but in which there is some doubt. Macadie has described a method of detecting them which is both rapid and more delicate than most other tests. It depends, like most others, on the extraction of bilirubin, and the production of a series of colors. It has the advantage that the amount of oxidation may be regulated and prevented from going so far as to pass through the green stage of biliverdin to the yellow or indeterminate stage of choletelin. About 10 c.c. of urine is acidulated with acetic acid, shaken up well, and to it is added enough of a clear saturated solution of calcium chloride to precipitate the bulk of the urates. The specimen is centrifugalized well, the supernatant liquid is decanted from the sediment, the latter is rinsed with a few drops of water, which is again decanted off and the precipitate left as well drained as possible. The greater part of the bile pigment that was present in the 10 cubic centimetres of urine has been carried down by the precipitated urates. To the latter 5 or 6 cubic centimetres of Macadie's reagent are now added; this consists of one part of hydrochloric acid of specific gravity 1.16 and three parts of rectified spirit of wine. On stirring with a glass rod the urate precipitate dissolves to a more or less clear solution on to the surface of which five or six drops of nitric acid of specific gravity 1.12 are allowed to trickle down the side of the tube. The liquid rapidly assumes a series of colors precisely similar to that of Gmelin's test. At the bottom of the liquid and next to the nitric acid is a yellow layer, above that a wine-red layer, above that a blue layer, above that a bluish-green layer, and above that a green layer. Care should be taken not to shake up the liquid. When bile pigment is present in any quantity the appearance is almost like that of a spectrum. The layers of different colors

are not in such close proximity as they are in Gmelin's test, and Macadie states they are therefore much more easily recognized. In doubtful cases, especially when the urine is being tested in a laboratory, the traces of bile pigment from a pint of urine can be collected in quite a small urate precipitate, and this makes the test a very delicate one. With the aid of a centrifugal machine the procedure can be carried out in less than five minutes, and it is not influenced by urobilin, blood pigments, or indican.

The danger of misinterpreting the brown color produced when the nitric acid is employed is considerable in practice, and the importance of avoiding this source of error is great. The only difficulty that might arise in connection with Macadie's test would be if calcium chloride did not give a precipitate of urates. This must be a rare occurrence, but when it arises one drop of caustic soda solution may be added to the mixture of calcium chloride and urine so as to get a phosphatic instead of a uratic precipitate. The process may then be continued in precisely the same manner as above and the reaction obtained as before.—*The Hospital*.

Scarlet Red for Epithelial Growth

Fisher first observed some few years back that solutions of scarlet red subcutaneously injected into a rabbit's ear induced an active proliferation of the overlying epithelium. As a result of this observation scarlet red has been employed to assist in the skin formation over clean granulating surfaces, and has been found of great value for this purpose, hastening the healing of large cutaneous defects and not infrequently supplanting skin grafting. Dr. Strauss publishes an article on the subject in the *Deutsche Medizinische Wochenschrift*. He employs an 8 per cent. ointment. Scarlet red is dissolved in chloroform oil, the solution being stirred until the chloroform has evaporated. Vaseline is then added to make the 8 per cent. ointment. This is spread upon gauze and is applied to the cleansed area. It should be changed every day or at least every other day. The addition of any antiseptic is unnecessary. This treatment is indicated in any large granulating area and is of special value for the epidermisation of defects following burns and for granulating wounds. In such cases, according to this author, subsequent contracting scars are in a large measure avoided. It has also acted very well in cases of ulcers of the leg, especially of the varicose variety and in weeping eczema.—*The Hospital*.

Bier's Passive Hyperæmia

It may be remembered that Bier's method of hyperæmic congestion has been used successfully in the treatment of writer's cramp, cases being recorded by Dr. Bucciante and by Dr. Hartenberg. Dr. Migliaccio has now published the report of a case of alcoholic tremors which he was able to completely relieve by the same method of treatment. The patient was a workman aged fifty, who had been addicted to alcoholic excess for a long while, and was suffering from severe gastric dyspepsia. One day in the course of his work he was taken with an acute pain at the level of the left radiocarpal joint (the patient was left-handed). Under appropriate treatment this pain disappeared in the course of a month, but left a tremor of the hand, which increased on voluntary movement. The whole condition—the tremor and the gastritis—was undoubtedly of alcoholic origin. Special diet and total abstention from alcohol were prescribed, and at the same time the tremors of the hand were treated by Bier's method. Already after six applications, each of which was of about 1½ hours' duration, there was marked improvement, which continued to increase after each successive séance, so that at the end of a month's treatment the patient was completely cured of these tremors. The rapidity of the improvement and the progress taking place *pari passu* with the applications proved beyond doubt, at any rate to the mind of the author, that the cure was actually due to the passive hyperæmia and not simply to the special diet and abstention from alcohol.—*The Hospital*.

The Metabolism of Myasthenia Gravis with a Suggestion Regarding Treatment. PEMBERTON. *Amer. Journ. Med. Sci.*

Though the clinical aspect of this disease has received a good deal of attention, little has been adduced regarding its etiology or pathology. Spriggs has examined the nitrogenous metabolism and creatinin output in various cases of muscular loss of function and believes creatinin to be a product of the internal metabolism of muscle, not of its contraction. In myasthenia gravis he finds the creatinin output diminished, suggesting a condition of disturbed muscle metabolism.

In the case here described, some investigations as to metabolism were carried out, the total nitrogen, ammonia, creatinin, calcium and magnesium of the urine being determined while the fæces were examined for total nitrogen, calcium and magnesium.

The patient was placed upon a diet whose content in the features investigated was known. Over a period of six days the patient showed a nitrogen retention of 16 grams. The creatinin output was diminished. The ammonia output seemed within the limits of health and the magnesium metabolism was normal. The calcium metabolism, however, did not maintain an equilibrium, showing a loss of more than 8 grams.

It is known that calcium has some close relation to the functions of muscular activity, for it has been shown by Loeb that a condition of muscular spasm can be produced by the injection of agents which precipitate the body calcium in an insoluble form, and that this condition can be relieved by injection of calcium salts.

Removal of the parathyroids in dogs which produces tetany is associated with loss of calcium in the urine and faeces and the tetany can be controlled by administration of calcium.

The diminished creatinin output and excessive calcium excretion in the case here recorded suggest that myasthenia gravis may be a disease of deranged muscle metabolism and indicates the use of calcium as a possible therapeutic agent. In the case under investigation calcium lactate was given and the patient has markedly improved in the course of a year and a half, but as some observers have noted remissions for long periods, and as strychnine has also been given, it is difficult to know what part of the improvement observed should be ascribed to the calcium.

It seems at least that this definite evidence of disturbed calcium metabolism may furnish a clue to treatment.—*Medical Chronicle*.

Primary Carcinoma of the Vermiform Appendix. NORRIS. *Univ. Penna. Med. Bull.*

After describing a case of primary carcinoma of the appendix in a woman aged 26, Dr. Norris states that carcinoma of the appendix is by no means so rare as has been supposed, and he suggests that, if all inflamed appendices were carefully examined, carcinoma would be found present in from 0.5 to 1 per cent. of the cases.

Diagnosis is practically impossible before operation. In some cases the symptoms are those of chronic appendicitis and in others the condition is only discovered during the course of operations undertaken for other reasons. Dr. Norris urges that the frequency of the condition is a strong argument in favor of the routine removal of the appendix in all cases in which the abdomen is opened.—*Medical Chronicle*.

The Diagnosis of Aortic Insufficiency. BRELET (*Gaz. d. Hop.*, February 8, 1910.)

While the diagnosis of a typical case of aortic insufficiency is easy, atypical cases occur in which the recognition of the lesion is very difficult. Thus the murmur instead of being blowing may be rough; it may be low-pitched and vibrating or high-pitched and musical. Occasionally it may be entirely absent. In this case the diagnosis must be based upon the size and shape of the heart, the location of the apex-beat, the Corrigan pulse, the capillary pulse, the double murmur in the crural space and other less constant manifestations of the lesion. Landolfi has recently described a new sign of aortic regurgitation which, while often absent, is almost pathognomonic if present. It consists of a rhythmic contraction and dilatation of the pupil independent of the will of the patient or of light. With each ventricular systole the pupil contracts, dilating with the diastole. The explanation of the phenomenon is simple enough, the contraction of the pupil being due to the momentary engorgement of the iris during systole and the dilatation to its abrupt emptying during diastole. It is, in a word, the manifestation of a capillary pulse in the iris.

A less striking, but more constant, sign is the so-called "choc en dôme" of Bard. This is best recognized by palpating the apex-beat by means of the ball of the thumb. In aortic insufficiency the apex of the heart can be felt to harden during systole in a circumscribed area of considerable extent, giving the feeling as though a ball or a dome-shaped mass were suddenly making its appearance under the palpating thumb. It is due to the ventricular hypertrophy and is most clearly felt when the patient lies on his left side.—*Interstate Medical Journal*.

The Permanent Slow Pulse

P. Rostaigne, of Paris, recently discussed the permanent slow pulse in an article published in the *Medical Press and Circular*, July 20. Adams, in 1827, was the first to describe the pathological permanent slow pulse, and the question has come to the front again recently. As a rule the pulse rate in these cases is from thirty to forty pulsations a minute, but it is sometimes even slower than this. In a general way examination of the heart does not reveal anything abnormal in respect of the orifices, but Stokes, who, together with Adams, described the pathological condition known as Stokes-Adams' disease, called atten-

tion to a peculiarity of the heart that is sometimes met with. Between the audible heart contractions a dull, muffled sound is heard, which he regarded as an abortive systole represented only by auricular contraction. It follows that the heart sometimes splits up the systole into two parts, a superior auricular, and an inferior ventricular, which occasionally misses fire. Rostaigne shows that Stokes' observations are borne out by the present conception of the pathogenesis of permanent slow pulse. Permanent slow pulse is an affection that runs a long course. As a rule it lasts for several years, but the prognosis is always grave, indeed fatal. Since Chareot's time and up to a recent date, the Stokes-Adams' syndrome has been regarded as a consequence of disturbance of the circulation in the medulla, that is to say, the central nervous system was credited with a preponderating rôle in regulating the heart beat. In view, however, of recent physiological and anatomical researches, the myogenic theory has taken the place of the neurogenic, the conception of cardiac automatism is now generally admitted, and little or no importance is attached to the medulla as the seat of origin of the disturbance of cardiac rhythm. The symptoms observed in the course of permanent slow pulse are now referred to a lesion of His's bundle, and what is more important is the fact that syphilitic lesions have been found at the root of the mischief. As Rostaigne remarks, this is quite a novel conception and justifies our anticipating recovery, in many of these cases of permanent slow pulse, as a result of mercurial treatment.—*Medical Record*.

Pulsus Paradoxus and Compression of the Subclavian

Riebold, *Berliner klinische Wochenschrift*, states that pulsus paradoxus has been clinically important since Kussmaul pronounced it pathognomonic of chronic mediastinopericarditis. Since that period the phenomenon has been observed in connection with a great variety of different conditions. A physiological type is explained by negative pressure within the thorax, due to the act of inspiration, which gives rise to a slight fall of blood pressure. This type is demonstrable only by the sphygmograph. The phenomenon is regarded as practically the same for the two sides, although a difference appears in forced breathing. In pathological pulsus paradoxus the falling in blood pressure which constitutes the phenomenon becomes apparent to the finger. The author wishes merely to record that in his opinion

certain cases (one of which he reports) have a purely mechanical cause, to wit: compression of the subclavian artery between the clavicle and first rib. It has long ago been shown that such compression may occur in deep breathing. A pulsus paradoxus due to such compression is revealed by elevating the shoulders of the patient, which separates the clavicle from the first rib. The author calls attention to the unwisdom of examining only the radial artery in pulsus paradoxus. The carotid should always be tested as well. When both vessels give an inspiratory intermittence, which disappears on raising the shoulders, the pulse is no longer paradoxal, but its cause is sufficiently explained. It then becomes a compression pulse.—*Medical Record*.

Chemistry of Urine in Pulmonary Tuberculosis

It is claimed by King, *Medical Record*, who has done some original work in this line, that the urine would show wasting and an imperfect interchange of gases due to diseased lung tissue. Wasting should be shown by the urea excretion, and imperfect interchange by the elimination of the purin bodies. He tabulates the results in 52 cases, 43 of which represented various stages in patients who were able to be out of bed, the others being bed cases. If the patient is near a fatal termination the urine will measure between 600 and 800 c.c.; it will have a decided red color from pigments of blood cells that are being destroyed; it will show a urea reaction that is more than 4.00, and the urinometer reading will be between 20 and 25. Specific gravity undergoes little change. Uric acid is not increased to any great degree. Tuberculosis produces a relative increase in the principal products of nitrogenous metabolism. If the volume of urine expressed in hundred c.c. be multiplied by the urinometer reading, we shall get a so-called V-G factor; if this be low it indicates that the patient is not taking sufficient nourishment to sustain the body in a state of health. The author introduces various new reactions that are explained in connection with the tables.—*J. A. M. A.*

Test of Kidney Functioning by Elimination of Disease in the Urine

Wohlgemuth, *Berliner klinische Wochenschrift*, applied this test first on dogs and then in 50 clinical cases, the reliability and accuracy of the findings sustaining, he declares, the value of

this simple method of testing kidney functioning: the test is complete in half an hour. He has two sets of 10 test-tubes, in which he pours from 0.06 to 0.6 c.c. of urine in turn and then to each tube he adds salt solution to bring the total contents of each to 1 c.c. He then adds to each tube 2 c.c. of a 1 to 1,000 solution of "soluble starch." The stands with the tubes are then set in the water bath at 38 or 40 C. for half an hour after which 1/50 normal iodine solution is added to each tube, a drop at a time, until the tint changes permanently. The findings are obtained by comparison of the action of the diastase according to the concentration in starch in the different tubes, each set containing the urine from only one kidney, segregated by catheterization of the ureters. The urine does not have to be filtered, and it can also have served previously for determination of the freezing-point; a little blood does not affect the test. In health, both human beings and dogs seem to eliminate approximately equal proportions of diastase with both kidneys. In a typical case reported, the freezing-point was 1.28 in the right urine and 0.53 with the left; sugar, 1.6 per cent. with the right, and 0 with the left; indigocarmin test: green after 7 minutes and blue after 15 with the right urine, the left urine still colorless; the index from the diastase test after 30 minutes was 10 in the right kidney and 3.33 with the left; after 24 hours, 25 with the right and only 8.3 with the left. The findings with all these functional tests thus harmoniously agreed, while the diastase test is even more sensitive than the indigocarmin and phloridzin tests, as it often gave positive findings when the other tests were still negative.—
J. A. M. A.

A Possible Differential Sign Between Cardiac Dilatation and Pericarditis with Effusion

W. J. Calvert (*Journal of the American Medical Association*) says that extreme dilatation of the heart is often difficult or impossible to differentiate from large pericardial effusions, and he gives a possible differential sign. In patients with large hearts the sternum is depressed, the entire liver is depressed, the right lobe of the liver is relatively elevated as to interspaces, the right lung is elevated and pushed outward and backward, thus giving a high position of the liver with a narrow band of lung-liver relative dullness. In pericarditis with effusion the liver is depressed, the right lung is pushed outward and backward more than upward, thus giving a low position of the liver with a nar-

row band of lung-liver relative dullness. The size of the liver is of no material importance. Two factors compose the differential sign—the position of the liver and the presence and position of the diminished area of lung-liver relative dullness. Of these the position of the liver is most important.—*Medical Record*.

Pseudoapical Murmurs

Allard (*Berliner klinische Wochenschrift*) writes very briefly upon this very important subject, which is so deeply concerned with hasty diagnosis of incipient pulmonary tuberculosis. The author is a member of Prof. Minkowski's staff at the Breslau University Medical Clinic. Given that we obtain in a particular case auscultatory and percutory evidences of incipient phthisis, the question which arises concerns the negative interpretation of the phenomena. No doubt many murmurs heard in these examinations are extrapulmonary and due to contractions of the trapezius, scaleni, etc. Such auscultatory illusions should be corrected by percutory evidence. But all such sounds are not muscular in origin; for in some cases there is evidence that they proceed from a sort of creaking of the bones and joints. The late Dr. Rosenbach was active in this diagnostic field and laid down rules for distinguishing between pulmonary râles and muscular sounds. But the very pains he took with this subject illustrate its intrinsic difficulties. He, as well as others—including the author—sought to exclude muscular participation by a system of "holding" during which auscultation of the apices was being undertaken. No doubt in all routine examinations much can be effected by placing all the muscles concerned in a state of repose.—*Medical Record*.

Miscellaneous

Simplified Tuberculin Skin Test

Barabaschi. *Gazetta degli Ospedali e delle Cliniche, Milan*, rubs the region with alcohol until the skin is red. Then in the center of the small area thus prepared he spreads the thinnest possible layer of undiluted tuberculin without rubbing it in and lets it dry. In the cases in which he has applied the tuberculin test in this way, the reaction was always positive in the 34 known tuberculous and negative in 35 controls. A positive reaction was obtained in 3 cases in which only the tendency to anemia had suggested tuberculosis, but the course of the cases confirmed the accuracy of the response. The method is similar to Lignière's technic only that there is no waste of tuberculin; Lignière rubs the skin with a wad of cotton dipped in the tuberculin, while Barabaschi does the rubbing with alcohol.—J. A. M. A.

Cardiac Neuroses

Max Herz (*Wien. klin. Woch.*) saw in one day 2 cases of cardiac neurosis simulating severe organic disease, and in each case there was a low pulse-rate accompanied by low blood pressure. He then examined the records of the last 1,000 patients with cardiac symptoms whom he had seen, in order to discover how often the condition of hypotonia and bradycardia were present either singly or in combination, and with what conditions they were associated. Cases in which bradycardia was a part of an infection or intoxication or was the result of increased brain pressure, an anatomical vagus lesion, etc., were omitted. The patients were almost altogether "ambulant," so that uncompensated cardiac lesions were not represented. A pulse-rate of below 68 per minute was considered to be slow. The number of cases was 73 of hypotonia, 55 of bradycardia, 29 of combined hypotonia and bradycardia. Of the 73 cases of hypotonia alone 48, or 65 per cent., were diagnosed as cardiac neuroses, while 17, or 23.2 per cent., were of arterial affections. Therefore, in doubtful cases, with symptoms which point to cardiac disease, a low blood pressure is suggestive of a cardiac neurosis. In the case of bradycardia alone 49 per cent. belonged to the group of arterial affections, 41.8 per cent. to that of the neuroses. With a combination of the slow pulse and low pressure 69.6 per cent. were of cardiac neurosis and only 27.5

per cent. of arterial affections. These figures lead to the conclusion that in the presence of cardiac symptoms, if insufficiency of the cardiac muscle be excluded, a low blood pressure is on the side of a diagnosis of cardiac neuroses. The other conclusions at which the author arrives are: (1) Extra systoles with a low blood pressure are seen almost without exception only in cases of neurosis. (2) A non-arterial systolic murmur probably does not depend on mitral insufficiency if the blood pressure be low. (3) Phrenocardia is most frequently seen in women, while hypotonia or bradycardia most frequently in men. (4) The dominating symptoms are in nervous hypotonia, painful sensations in the cardiac region, in nervous bradycardia palpitations and in bradycardia hypotonica, general weakness. (5) In bradycardia hypotonica there is a condition of true nervous heart weakness, sometimes with albuminuria and œdema.—*British Medical Journal*.

Medical Education in Vienna

It falls to the lot of a medical man only a few times in his life to visit the great centres of post-graduate study, and when these opportunities come he wants to know where it is best for him to go, so that he may spend the few weeks or, happily, months to the most advantage. For many generations there has been a large exodus to Vienna, and from some recent figures at hand it would seem that the capital of the Austrian Empire is still as popular as ever among American physicians.

The hospital facilities of Vienna are surpassed nowhere in the world. Not only do patients come from the city itself (with its population of nearly two millions) and the immediate neighborhood, but it is no uncommon sight to see a child, perhaps, brought from as far as Russia, so great is the fame of the hospital in Eastern Europe. In fact, the number of patients applying for admission is so great that each bed contains for the most part only a case that is either acutely ill or is of great interest. When the new hospital is completed the building will be one of the finest in the world.

Perhaps in no other centre does one find such a galaxy of famous men, who are nearly all willing to do post-graduate teaching. The courses in all branches are usually so varied and so abundant that one has no trouble in filling up a time-table which will keep one busy from 7.30 a.m., when the lectures begin, till 10 at night. But the fees are high. The average for a general course would be perhaps \$100 a month; in a special course, with operations, a good deal more. The classes, however, are

small, and there is usually the feeling that you have got your money's worth.

A doctor whose knowledge of German is very rudimentary would be pleased to hear that the language problem is not insurmountable. There are many men who go there and get good courses who do not understand a word of German. Most of the instructors can lecture in English, some of it so good that it would make even a Canadian proud if he could speak as well. Those who know German, however, have an advantage, for they can attend whatever lectures they desire. But a very few words and phrases will carry one a long way.

Vienna is a very beautiful city in many ways and has some fine art galleries. Then the outlying villages are all intensely interesting and easily reached by short excursions. Although the cost of living is rather high (\$10 to \$15 a week in a pension), the food is good, and the Viennese make a specialty of catering to the American physician. If, however, one desires to live as the Austrians do, he can get along very cheaply, although the landlords are proverbial for their sharpness in driving a bargain and in "doing the American."

The concensus of opinion among medical men who have worshipped at the shrine of Æsculapius in many places is that Vienna cannot be surpassed as a place to give both quality and quantity of work to a physician who has only a short time at his disposal.

F. A. C.

A New Method of Inflating the Stomach

Stewart Lewis (*J. A. M. A.*) has practised the following method in about 50 cases: He places the patient on the examining table, with the abdomen exposed, and arranges a siphon of carbonated water so that the patient can drink. He directs the patient to drink slowly at first, and then as rapidly as possible. The average patient takes about eight ounces, though in favorable cases half this amount will bring the outline of the stomach into view, while the mixture of gas and fluid gives to palpation a crackling feel and a typical splash apparent to the most inexperienced. The direct method of percussion is employed with a small wooden object, such as a lead pencil or a paper knife. The following objects are attained: Size and position are accurately determined. With practice some idea of the gastric tone may be obtained. Roughly speaking, four ounces of fluid will lower the border of the normal stomach about an inch; in atony it may

lower the border two or three inches. (3) Rapidity of escape of the gas into the intestines will be a crude test of the tone of the pylorus. Tumors may be more readily palpated. This method has the advantage over other methods of being safer and much less unpleasant, and, in the opinion of the author, it is efficient.—*Medical Record*.

Eczema of the Scalp

In a child, cut the hair short and soften the crusts with strips of flannel dipped in oil, and fasten on with a calico cap for six hours. After removal of the crusts an ointment of oleate of zinc or lead may be used, with later, perhaps, a few grains of ammoniated mercury added. Boric acid and starch poultices may be used for the preliminary cleansing, but linseed and bread poultices should be absolutely tabooed, as they too often serve as nutrient media for pus and other cocci.—*Dr. Radcliffe Crocker*.

The Treatment of Ascites by Means of Collargol. RIEHL. (*Muench. med. Wochenschr.*, 1910, No. 21.)

Riehl reports three cases of ascites, one due to ovarian cyst and two to hepatic cirrhosis, in which collargol proved useful. The skin of the abdomen or of the back was thoroughly cleansed and from 3 to 4 grams of unguentum Credé were firmly rubbed in from fifteen to twenty minutes. In each of the three cases the ascites disappeared, not to return until after a considerable interval of time. The good results of the treatment were apparently due to the diuretic action of the collargol, since in every case a marked increase in the amount of urine secreted was observed. Occasionally a watery diarrhoea ensued and also aided in the elimination of the fluid. The number of cases reported is small, but if puncture of the abdomen can occasionally be replaced by so simple a procedure, the latter is certainly worth a trial.—*Interstate Medical Journal*.

The Antitoxin Treatment of Diphtheria

Again are we nearing the season when the problem of diphtheria and its treatment must be met and solved. The writer of this paragraph is forcibly reminded of the fact by the receipt of a modest but important brochure of sixteen pages, bearing

the title, "Antidiphtheric Serum and Antidiphtheric Agglutinins." A second thought is that here is a little work that every general practitioner ought to send for and read. Not that the booklet is in any sense an argument for serum therapy. It is nothing of the kind. Indeed, the efficacy of the antitoxin treatment of diphtheria is no longer a debatable question, that method of procedure having long since attained the position of an established therapeutic measure. The pamphlet is noteworthy because of the timeliness of its appearance, the mass of useful information which it presents in comparatively limited compass, and the interest and freshness with which its author has been able to invest a subject that has been much written about in the past dozen or fifteen years. Its tendency, one may as well admit, is to foster a preference for a particular brand of serum; but that fact lessens not one whit its value and authoritativeness.

Here is a specimen paragraph, reprinted in this space not so much to show the scope and character of the offering, as to emphasize its helpful tone and to point out the fact that its author was not actuated wholly by motives of commercialism:

"Medical practitioners have learned that inasmuch as the main problem presented in the treatment of a case of diphtheria is the neutralization of a specific toxin the true antitoxin cannot too soon be administered; moreover, that, antitoxin being a product of definite strength, a little too little of it may fail when a little more would have succeeded—hence, larger or more frequently repeated doses are becoming more and more the rule. One more point: if the medical attendant is prompt, as he must be, and fearless, as he has a right to be, the full justification of his course will hinge upon the choice of the best and most reliable antidiphtheric serum to be had; for while there is little or no danger of harm ensuing from the use of any brand issued by a reputable house, the best results—which may mean recovery as the alternative of death—can only be hoped for from the use of the best serum."

The brochure is from the press of Parke, Davis & Co., who will doubtless be pleased to send a copy to any physician upon receipt of a request addressed to them at their main offices, Walkerville, Ontario.

The After-care of a "Bad Cold"

The young, virile, robust individual who contracts what is commonly termed "a bad cold" rarely suffers long from such affection, as the superior resisting power of such persons soon

overcomes the virulence of the infecting agent, and recovery is rapid and complete. It is apt to be very different, however, with those whose circulation is less active, and whose phagocytic activity is "below par," due to advancing years or general devitalization, from whatever cause. For such patients something more than expectorants or respiratory sedatives is required. General nutritive and reconstituent measures are indicated, and a quickly acting and substantial medicinal tonic almost always materially hastens recovery in such cases. Pepto-Mangan (Gude), with which is combined an appropriate dose of strychnia, is the ideal supportive treatment, as the combination not only tones the circulation and the nervous system, but also supplies, in palatable, tolerable and immediately assimilable form, the organic iron and manganese needed to revitalize the blood and infuse force and vigor. In the case of young children it is perhaps wise to depend upon Pepto-Mangan (Gude), without strychnia.

A Valuable and Seasonable Remedy

To reduce fever, quiet pain, and at the same time administer a laxative and tonic is to accomplish a great deal with a single tablet, and we would especially call attention to the wide use of Laxative Antikamnia & Quinine Tablets in chronic or semi-chronic diseases which begin with a severe "cold." Among the many diseases and affections which call for such a combination we might mention la grippe, influenza, coryza, coughs and colds, chills and fever, and malaria with its general discomfort and great debility. Attention is particularly called to the therapeutics of this tablet. One of its ingredients acts especially by increasing intestinal secretion, another by increasing the flow of bile, another by stimulating peristaltic action, and still another by its special power to unload the colon. When the temperature of the body is above normal, conditions are especially favorable for germ development. It is a matter of every-day observation that a simple laxative is often sufficient to relieve the most dangerous complications.—*Archives of Pediatrics*.

Moist Heat

Thermotherapy in inflammatory conditions seems to prove most effective when applied in the form of moist heat.

The relaxation of pressure by infiltrated and swollen tissues upon nerve endings, as experienced by the relief of pain, specifically proves this.

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Original Communications

THE USE OF RADIUM IN THE TREATMENT OF CANCER AND OTHER DISEASES*

SELECTIVE ACTION OF RADIUM

DR. LOUIS WICKHAM, PARIS.

Médecin de Saint-Lazare; ancien chef de Clinique de la Faculté; Directeur des recherches en Pathologie externe au Laboratoire Biologique du Radium.

As a rule, when speaking to a general practitioner about radium as a means of curing diseases, I find that in his mind arise three ideas:

1. The idea of a burn.
2. The idea of an action only on the skin.
3. The idea of an action localized on a small area.

These opinions are right, but only to a very limited extent. Certainly radium can act on the surface as a caustic and on a small area, and in so doing radium is interesting, because the burning is produced without pain, the degree of destruction can be controlled, and the newly formed tissues are often, after a burn, smooth, supple, and with the exception of telangiectasis, sometimes very satisfactory.

I will explain further on how radium acts as a caustic, but this is not the only aim, the chief aim, of my lecture to-day. If the influence of radium ended there, it would not be worthy of the special consideration which must be given to it, because we possess a good number of other destructive agents.

I will endeavor to demonstrate, taking great care not to fall into exaggeration,

* Abstracted from a lecture-demonstration given before the Academy of Medicine, Toronto, Sept. 30, 1910.

1st. That radium can, by a special action which is called "Selective Action," influence favorably certain pathological tissues without burning them.

2nd. That radium can be used to act deeply on subcutaneous diseases and also on certain distant tumors, some of these even thought at first inaccessible.

3rd. That radium can be used for treating somewhat larger surfaces, and even can claim some action on the general system.

In conclusion, that radium in so doing shows itself as a useful weapon against several diseases, especially against cancer, and often helps surgery and X-rays by completing and prolonging their effects.

I wish first to dwell on: the *Selective Action of Radium*, as this action is most important and often overlooked. In fact, what raises radium to a higher level than the ordinary caustic is that even when a burn is produced, it can act in a selective manner far beyond the portion burnt, as a very subtle modifying agent, leading certain pathological cells to degeneration without injuring the surrounding ones. Furthermore, thanks to certain conditions of technic, the burning can be avoided, and the selective curative action alone employed.

This once said, we must bear in mind that this selective action cannot be produced in all kinds of pathological tissues, but especially on malignant tumors, such as epithelioma, sarcoma, lymphadenoma, mycosis fungoides, on enlarged tuberculous glands, on angiomatous and keloid tissues, on eczemas, and on the nerves to produce analgesia.

There follows an histological study made with Doctors Degrais and Gaud which will not only show the selective power of radium on cancer cells, but also at what depth in certain cases of cancer this selective quality may act upon the cells.

You see on this slide the breast of a patient. On the right there is an enormous cancerous infiltration. On palpation this breast presented a hard and somewhat homogeneous mass, which measured $6\frac{1}{4}$ inches transversely. In a single part which I here show you I gathered and placed 19 centigrammes of pure sulphate of radium, that is to say, 190 milligrammes, contained in four flat varnished apparatus superposed, the first one applied naked without any screen on the skin. These 19 centigrammes were left in place for 48 consecutive hours.

A charged electroscope which was presented on the opposite side of the breast was discharged in 8 to 9 seconds, and in like manner a screen of platino-cyanide of barium was illuminated.

These experiments clearly showed that the very penetrating rays had traversed the $6\frac{1}{2}$ inches of tissues.

However, it does not follow that because the rays traverse an organic tissue of such thickness they must necessarily act therapeutically on all their way through these tissues; in fact, we will see that a therapeutical action is only in proportion to the amount of rays which reaches a special spot; and it must be understood also that each layer of cells cuts off a certain number of rays, so that the deepest layers receive but a very small amount of rays.

As the patient underwent an operation for the removal of the breast on the sixteenth day after the 48 hours application was completed, we were enabled to make a histological examination of the tumor, in order to ascertain what changes had taken place in the cells, and at what depth these changes were observed.

This photograph was taken just before the operation. Observe the difference in the size of the breast, which has diminished in size during the sixteen days so that it now measures only $5\frac{1}{2}$ inches in diameter. Instead of one hard, homogeneous mass, distinct hard nodules could be felt.

After the breast was removed we cut it through the middle in the same direction as the rays traversed it. Here is the photograph of this section.

The arrow shows you the direction of the rays. The apparatus had been placed at A and directed from A to B. You can see a large burn on the surface, and farther, you at once observe a very decided difference in appearance of the cancerous tissues which lay directly in the path of the rays and those which were beyond them.

The former are hard and smooth, somewhat sclerotic tissue; the latter are greyer and softer and have an encephaloidic character.

For the histological examination, sections were taken from a cancerous gland of the axilla, which had not been irradiated and from the breast tumor at different levels, namely $\frac{1}{2}$, $3\frac{1}{2}$ and $5\frac{1}{2}$ inches.

Here is a slide which shows with slight magnification both non-irradiated and irradiated tissues at the depth of half an inch. The nature of the cancer is an atypical lobulated epithelioma. You can see at the first glance, by comparison, that the amount of the connective tissue stroma has increased. This connective tissue penetrates into the epithelial lobes and separates them. It contains newly formed nuclei, which you will see more clearly in the more highly magnified section which I will now show you. The

connective tissue contains, as you see, young fibroblast and lymphocyte cells.

These changes are not the sign of an inflammatory condition, because the multinuclear leucocytes are wanting and because there are no nuclei of pus. Therefore, this tissue is a young embryonic, infiltrated tissue.

Besides these connective tissue changes, there can be seen changes in the cancer cells. These changes consist of a degeneration which bears at the same time both on the nucleus and on the protoplasm of the cell.

The nuclei are generally changed; in some cells they are enlarged; in others they are either multi-lobulated and proliferated or contracted; the chromatic filaments are changed, and many other changes can be observed, such as some pseudo-parasitic bodies and some corpuseles—acidophiles. At the end of this process of degeneration we find cells in cytolysis, with a nucleus in karyolysis, and this is the last expression of the liquefaction of the cell and its nucleus. In short, the radium rays bring about at the same time a cellular degeneration and an embryonic modification, and the modifications end in a stage where the cancerous tissues have been absorbed and have disappeared and are replaced by a fibrous tissue.

This transformation explains why, from a clinical point of view, the big malignant tumors, while disappearing under the influence of radium, leave in their place different little hard fibrous masses.

When possible these fibrous masses must be surgically extirpated, because very often they still contain cancer cells ready for recurrence. For the same reason, when these hard masses are obtained, it is wiser and more prudent to still treat them, for a long time keeping them under the influence of radium and watching them carefully. I will show you a practical case to illustrate this conclusion.

This is a model, made in September, 1908, which represents a case of lobulated epithelioma with proliferating nuclei, developed in the form of an enormous tumor on the left cheek. The tumor projected two inches above the normal level of the cheek and extended on a surface of 3 inches vertically and 4 inches transversely.

After treatment by radium, without any surgical operation, the tumor after five months was reduced to the level of the normal surrounding tissue. The base of the tumor, which at first was firmly and solidly fixed to the face, quite inoperable surgically, gradually became loosened. Through the apex of the tumor, where you see an ulceration, a large quantity of thickish white secretion resembling milk was gradually discharged, being

the result of the special radium reaction. A radium tube had been introduced inside the tumor through the ulcerated apex, and the exterior had been treated by the crossfire method, i.e., by means of placing flat varnish apparatus opposite each other and circumventing the base. Thus an enormous quantity of radio-active energy was introduced, literally saturating the tumor.

The technique was conducted in such a manner as not to produce any irritation or burning of the surface. After the tumor was entirely reduced, there were left under the skin some hard, fibrous nodules. These nodules ought to have been surgically extirpated, for a year after they were the site of a recurrence that we are now fighting.

If we return to our breast case we see that in the last cancerous lobe, the one situated at the extremity, opposite to the apparatus, and six and a half inches distant from them, the histological modifications still exist, though very much less pronounced.

The demonstration given by this case, that radium in a given "radioactive strength" can act strongly at a depth of $3\frac{1}{2}$ inches and even farther, is most interesting and of practical importance, especially as some observers in Paris have limited the penetrative action of radium to about one inch.

Now I will show you a more precise and definite demonstration of the selective action of radium on cancer cells.

This is, on the same section, a glandular acinus and a little deeper a cancer nodule. The latter received fewer rays than the acini glands, as it was farther from the skin. Nevertheless the first have remained unchanged, whilst the second are undergoing degeneration.

The selective action of radium is thus clearly shown and explains why it is possible to transform deep subcutaneous as well as superficial cancers without causing any irritation of the skin.

How must we understand the transformation? Is it the expression of a real specific action of radium having a special character, special laws? It may be, and I think it is so. But we cannot up to the present say precisely whether this transformation is anything else but a degree of destruction, a more or less resistance of the tissues. In fact, if we increase the doses of rays we find that the changes involve not only the cancer cells but some of the surrounding normal cells; and if we continue to increase the doses we bring about an equal destruction of all the elements irradiated, so producing complete necrosis.

Nevertheless, it must be known that the different tissues which respond to selective action are more or less susceptible to

the rays. If we consider the different kinds of cancer we see that a small dose can transform a lymphosarcoma, where a larger dose is necessary for ordinary sarcomas, and doses still larger for the different kinds of epitheliomata. But experience shows many exceptions to what I am now stating; and I have met with epitheliomata easily transformed and ordinary sarcomas difficult to transform.

If we consider eczema we find that rebellious eczema to be transformed by radium by selective manner needs absorption in its elements of very small quantity of rays; keloids need a larger quantity of rays than eczema. In a case of flat angioma of the scalp a cure has been obtained without the slightest inflammation or burning of the surface; the epidermis was still there and undamaged. Nevertheless, the tissues under the epidermis were entirely changed; the big enlarged vessels had disappeared; so also the sebaceous glands. Evidently, it was a fibrous change which has taken place. All these transformations were due to selective action of radium.

We are now ready to look over the clinical part of the subject, and I will, before dwelling with the cases themselves, show in what consists the radioactive energy of radium, and how the instruments are constructed for therapeutical use, and how the rays can be dosed and utilized.

Radium is an element discovered in Paris by Professor and Me. Curie ten years ago, out of pitchblend (oxide of uranium), an element which has the property of emitting a gas named emanation and rays named Alpha, Beta, and Gamma. The gas emanation has no penetrating power; it does not go through substances, and any cover retains it; so it can only be utilized when radium's salts are free, for example, when in solutions. In that way radium may be therapeutically useful, and I have given the name of emaniferous methods to those which utilize the emanation; but I will leave this question to the end of my lecture.

The methods which are usually and commonly employed are the *radiferous methods*. The radium rays are of three different kinds—alpha, beta and gamma rays.

By interposing a screen, we change the quantity of the rays and produce at the same time a radiation composed of rays of weak number it is true, *but having a strong power of penetration*. This is the principle of the so-called filtration that I began using in March, 1905.

The filtration represents a distinct progress in radiumtherapy. Its chief advantages are the following:

1. By cutting out the weak penetrative rays it permits the

accumulation in the deep subcutaneous tissues of a certain quantity of rays without causing any irritation to the surface, provided that the duration of the application is not too long.

2. The filtration produces a gentle passage of the rays and their slow and progressive arrival in the tissues, which is important, in treating, for example, some irritable cancers.

3. The small quantity of rays emitted in the same time permits the night application, an apparatus being applied in the evening, taken off in the morning, without the slightest inconvenience for the skin, if the doses are well regulated, and without the slightest discomfort for the patient, and that is a very convenient and practical mode of treatment.

Of course it is understood that these advantages vary in proportion to the thickness of the filters used. You will perceive more clearly these different considerations, when I explain the different reactions which it is possible to obtain and the cases themselves.

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Thanks to special technics which are very delicate and complex, the following reactions can be obtained:

1. A superficial necrosis of the tissues.
2. A deeper necrosis with selective action still deeper.
3. A superficial action by selective action without any burning.
4. A deeply produced selective action without any superficial burning.

These different kinds of reactions, it must be clearly understood, are not sharply defined but schematic, merging more or less one into the other.

Now arises a very interesting and important question: how can we manage to produce at our will such different reactions? The answer is: by the difference of the quantity and the quality of the rays absorbed by the tissues, these two factors being combined in different proportions.

That which regulates the *degree of intensity of destruction* of tissue, from selective action to complete necrosis, is the *quantity* of rays absorbed by the tissues *in a given time*.

That which regulates the *depth* at which the chief reaction is produced is the *quality* and nature of the rays, which, penetrating to a given depth, are there absorbed.

The absorption by the tissues of a large quantity of a predominate number of weakly penetrating rays would produce a necrosis at the surface.

The absorption by the tissues of a large quantity of hard

Beta and Gamma rays, "rayonnements surpenetrants," strong, penetrating rays, would produce a deeper necrosis.

The absorption of a smaller number of weak, penetrating rays would produce a superficial selective reaction without any burning.

Finally, the absorption of a small number of strong, penetrative rays, combined with the cutting off by filtration of the other rays, would produce a deep-seated selective reaction without any burning of the surface.

Let us now see how we must use the apparatus at our disposal in order to obtain these modifications, in order to obtain the combinations of quantity and quality, in order to obtain such and such quantity or such and such quality of rays.

The quantity of rays used is under the control of three different means:

1. The choice of the radio-active source, which can be more or less intense; the choice of a strong or weak apparatus; the choice of several apparatus applied in the same time, that is to say, the quantity of pure radium used, for treating a simple case.

2. The different duration of the application. A comparatively weak apparatus or a comparatively weak radiation, if left in place for a long time, say 100 hours, will cause the tissues to absorb an enormous quantity of rays. A comparatively powerful apparatus left a very short time in place, say one minute, will cause the tissue to absorb a rather comparatively feeble quantity of rays.

3. The filtration which cuts off a given quantity of rays. These factors all affect the quantity of rays absorbed.

Now, in regard to the quality of the rays absorbed, it can be modified only by filtration. Do you want the majority of the rays to be of very weak penetrative power? Then you choose apparatus made so that their case or their varnish is as thin as possible and apply them without screen. The linen apparatus having a very thin varnish gives passage to a great quantity of the rays.

Do you want the majority of the rays to be of greater penetrative power? Then you interpose light screens 1-100, 2-100, 5-100, etc., of aluminum.

Do you want the majority of the rays to be of super-penetrative power? Then you interpose screens which will allow none but these to pass; screens of 1mm. and 3mm. thickness of lead.

If we recapitulate all we have said, we see that, in short,

radiumtherapy has four factors to deal with, each of which can be varied *ad infinitum* and combined one with the other.

They are:

1. The radio-active source capable of infinite varieties of form and power.

2. The screens, which can be of any desired thickness and density.

3. The duration and method of the applications, also capable of infinite variations.

4. Lastly, the factor resulting from the nature and sensitiveness of the tissues treated and individual idiosyncrasies.

And you can easily understand how complex are these new methods of treatment, and how necessary it is to have a thorough knowledge as well as a wide experience, in order to obtain the maximum value and utility from the employment of a radium apparatus.

Now I come to the practical part of my lecture, in showing the cases themselves and explaining the methods and doses employed.

(Here a splendid series of photographs were shown and explained, indicating the results obtained in the treatment of angiomata, keloids and eczemas.—Ed.)

* * * * *

I have now arrived at the subject of cancer, and while developing further the question of selective action, will show in what different clinical ways the cancer tissue reacts under the influence of radium.

I will place them in different groups, speaking of superficial cancers but rapidly. I think that the more important work of radium is in the treatment of deep and grave cancers.

There is a first group for which some burning may be made.

The first slide represents a budding epithelioma at its four stages of regression. The treatment was made with an apparatus containing a 1-4 of pure bromide of radium and left in place 6 hours.

On this other case the budding epithelioma being much larger it was necessary to apply three hours more.

I am going to show you some small rodent ulcers, which can be very well treated by the varnish apparatus containing a 1-4 of pure radium applied without any screen from 1 to 3 hours.

These epitheliomata are, generally speaking, easy to treat and cure, and such as well by many other means; nevertheless in this group we meet with very resistant cases.

1. Those which present lymphangitic irritation on their periphery.

2. Those which are situated on bone, on cartilage, as the temples, forehead, nose, ear, and in general in all the regions which are not fleshy, and especially in thin persons.

3. Those which recur in cicatrices.

For all those cases a burn must be avoided; sometimes a light inflammatory reaction may be allowed. The treatment must be conducted with the view of obtaining the selective action of radium.

For the eyelids, radium is most specially useful, because not only are they difficult to treat, but radium can be of much service to them in those cases where X-rays can only be applied with difficulty.

We now come to the grave cases of cancers, and here we enter into the field of major surgery. I wish to lay stress upon this because I consider it the culminating point in the study of radium.

Here I should like at once to make some precise statements, which I should, in the natural order, give later on as my conclusions.

Firstly, the radium therapist in presence of one of these cases must never neglect to ask the advice of a surgeon: that is a question of the patient's security, because it is the best way of bringing back into a wise direction the present radium therapeutic movement and prevent it from going into exaggeration and into improper hands. Therefore, if the surgeon says he is sure of a cure in cases where the cancer is only beginning, he must operate at once. Very often it will be better to use radium first to diminish the virulence of the cancer, and then, after a lapse of a fortnight, the operation may be performed.

Radium can be employed on the scar after the surgical extirpation to make the result more secure.

Secondly, if the surgeon finds the case difficult to operate, or furthermore, if the case is inoperable, or finally, if the surgeon is obliged to produce a large deformity, then recourse to radium must be considered. Amongst the different aids to surgery radium in most cases must be recognized as its most useful auxiliary. There is then an association between surgery and radium, and by this association, as we will see, surgery extends its own activity. In short, radium opens the way to new and wider surgical fields.

Thirdly, if the knife cannot even reach the place where cancer lies, radium must also be considered.

I will extract from the number of cases I have treated those in which radium has been successful, and those which permit me to give some useful consideration.

I have said that if surgery considers a case inoperable or difficult to operate, it can then call in radium; and in so doing it in no way abandons its own position, but, on the contrary, strengthens it. The reason for this is very apparent.

To obtain the best results it is necessary to inundate the tumors entirely and at every stage with the greatest possible amount of rays. Surgery, then, can step in to offer to the rays less thickness of tissue to be traversed, in different ways, such as making perforation with a trocar in the tumor so as to introduce (as Dr. Abbe was the first to do) one, or better, several tubes of radium in the most useful places, enabling one or more tubes deeply embedded in the tissue to send their rays in a cross-firing manner.

These tubes must be of the greatest radio-active power possible; they should contain at least from 5 to 10 centigrammes of pure radium and their walls, forming the filter, must be as thin as possible, not more than 3-10 mm. of silver, so that a considerable quantity of rays may be put in action.

These tubes are left in place 24 or even 48 hours. During this time other apparatus may be applied on the cutaneous surface of the tumor, but now with thick filters to prevent any necrosis of the surface, and thus the cross-fire is made in every direction.

But there are other methods in which surgery and radium can work together. Surgery can perform a large incision to enable the placing of apparatus inside the wound, and it can also excise the maximum of the growth.

One patient, after the extirpation of a small cancer of the labio-gingival region, had a sub-maxillary metastasis, spreading rapidly in an acute manner in the neck to such an extent that it was judged inoperable and absolutely hopeless.

The histological type of the tumor was "Epitheliome-tubulobulbo-meta-atypique."

It developed rapidly and looked extremely malignant. My friend, Dr. Banzet, a noted surgeon in Paris, was asked to take away the maximum possible of the tumor in September, 1909. He cut it slice by slice and only stopped when near the large vessels and muscles of the neck. At that moment the entire base and circumference of the wound was still a mass of cancerous tissue. It seemed quite certain to Dr. Banzet that his surgical intervention was perfectly useless, perhaps even harmful, and that in a month, as he had said, the cancer would bud again.

During 48 hours I placed very large doses of radium inside

the wound without filter, and outside with thick filters. After three months the wound was almost cicatrised.

Other series of treatment were again given outside the wound, followed by periods of rest. What is the actual state of the patient now? In the place of his cancer is a hard, fibrous mass, which impedes the movements of the neck.

In such a case is it possible to speak of a cure? Unhappily, I do not think so, because in the middle of the fibrous tissue there must certainly be some epithelial lobes, seeds of a future recurrence, and for this reason I recommence treatment about every two months.

But, even if I cannot yet claim a cure, you will, however, certainly grant that radium in this case has played a very interesting and useful part; inasmuch as a *full year* after the beginning of radium treatment the man is still alive and in good condition.

It is not only in diminishing the thickness of the neoplastic tissues that surgery can render radium more useful, but also in creating artificial orifices so as to conduct radium on the growth or in profiting by the natural orifices; and, in both cases, surgical skill is necessary for conducting the radium apparatus to a good position, right on the cancers when they are otherwise out of our reach.

With Drs. Gaultier and Labey I decided the following technic for the treatment of a cancer of the pylorus in a patient who was in a very low state:

Dr. Labey performed an ordinary gastro-enterostomy, but instead of closing the artificial stomachic orifice, he arranged on the anterior wall of the stomach an orifice which permitted the passage of a probe containing a tube of radium. This probe was so curved as to allow the surgeon to place the tube of radium on the cancer of the pylorus.

At the same time I placed powerful apparatus with thick filter on the skin of the gastric region where the tumor could be felt, and thus produced the "cross-fire." The applications were repeated with special technic which I have no time to detail.

At the fifth month the stomachic orifice was permitted to close.

The operation took place in June, 1909, and to-day, 15 months after, the patient is apparently in good health. Of course I cannot in this case draw any conclusion in favor of radium, since gastro-enterostomy is known to sometimes greatly prolong the existence of the patient.

I have simply mentioned it to draw your attention to different

new operations that surgery may perform for utilizing the therapeutic force offered by radium.

I have treated cancer of the larynx by performing tracheotomy, and cancer of the intestines after colotomy.

Even for the introduction of the tubes by natural orifices the skill of the surgeon is needed.

Cancers of the œsophagus, of the rectum, benefit greatly by radium treatment, but on the express condition that the seat of the cancer be exactly located by œsophagoscopy or rectoscopy, so that, by these means, the radium tubes may be placed on the exact point.

I can speak of a case of cancer of the rectum which, treated in April, 1909, has regressed in such a manner that the patient, a year and a half after, is still in an apparently good state.

But I wish to lay stress on a particularly successful case: it concerns an English colleague. He had been attacked by cancer of the neck of the bladder; the diagnosis had been clearly made in England first, and was confirmed in France, each time with the cystoscope. The patient suffered considerably, had frequent mictions, lost blood, and a nodule was felt in the prostate.

I asked Dr. Pasteau, a distinguished urologist surgeon, to make the application. With great skill the place was marked by the urethroscope, and the apparatus placed every time in the right place without any breaking or irritation of the mucous membrane, and with a gentleness of hand indispensable in such a case. The treatment began in November last; little by little the pain diminished, then ceased; the other symptoms also weakened to their disappearance, and now our colleague is in excellent condition.

Is he definitively cured? It is very difficult to say or to foresee the future, but let us at least consider the present.

At the present moment our English colleague is a happy man, full of hope, once more enjoying life, and when he compares his present state, eleven months after, with what, without radium, he knows would be his state, it is impossible for him not to have for this therapeutical agent a great deal of gratitude.

There remains yet another most interesting use for radium in combination with surgery. This resides in the property of radium to cause decongestion of the tissues and modify the virulence of cancerous cells. And so in a difficult case, if radium be first applied, when the knife intervenes, it will encounter ground where the virulence will be greatly less.

But cancer is not the only ground on which we find such services rendered by radium to surgery in preparing the way for the bistoury by previous action.

Here is a case of an enormous angioma on which it was impossible to operate. All the tumors were full of blood and very fluctuating. By a long preliminary treatment we obtained the regression that you see here. It is considerable, but the important point is that the tissues still projecting are no longer so soft, full of blood, and dangerous to operate, but rather sclerotic.

Here is a case of keloid which was operated on three times, each time with recurrence of a larger tumor, and we therefore proposed the following technic: Radium action first on and around the tumor. Surgical extirpation, and then treatment of the cicatrix by radium. This technic seems to have succeeded. no further recurrence having appeared, although the operation was performed 18 months ago.

I will now go rapidly through desperate cases of cancer in which surgery felt more or less powerless, and where radium by itself without the help of surgery has been able to bring relief of some interest:

1. A cancerous mass of the sub-maxillary region, which has been reduced by radium, but the original cancer which existed in the tonsils and descended to the pharynx could not be destroyed, and so carried off the patient.

2. A case of a complete and durable regression of a lympho-sarcoma of the cervical region; the tumor was very projecting, but although the result is really striking the term cure is quite incorrect, since, later on, metastasis developed in the mediastinum, to which the patient finally succumbed.

3. An adenopathy, which was sent to us as a case of Hodgkin's disease. The treatment rapidly caused the entire disappearance of the morbid mass. Unhappily, the patient is at this moment very ill in his general health and in danger of death.

Radium seems to have played in some of these cases a useful part, since it decidedly prolonged the life of the patient.

4. A case which profited very well from radium: It is a myxo-sarcoma of the shoulder, which was largely operated upon several times. After each operation there was a rapid and more extensive recurrence, which finally became so considerable that an operation was scarcely possible. The surgeon asked us to treat it with radium. The place has been well cleared of the malignant tumor, and it has remained in a healthy state during a year. Lately a recurrence has appeared in the anterior wall of the armpit, but it has equally and entirely regressed under the influence of radium.

5. A case of recurrence of cancer of the breast which disappeared under radium and the patient keeps in a good state. Indeed on the breast radium has clearly a favorable action, as it is easy to treat and to inundate with rays; and in those cases

which are quite operable and not too advanced, but where the patients have refused surgical extirpation we have obtained very fine and lasting results.

It is only in case of a formal refusal of surgical help that we have used radium.

One of our cases which was inoperable, the patient being 78 years of age, was treated for the first time in November, 1907, nearly three years ago; it regressed and still maintains its good appearance, thanks to the series of applications given at long intervals.

In one case where the patient has peremptorily refused the extirpation of her breast, I proposed the following combination: surgical extirpation of the entire lymphatic mass and the sub-pectoral and axillary glands, treatment by very intense radio-activity at the point of the section by knife of the lymphatic vessels close to the breast, treatment of the breast itself by cross-fire by applying to the surface several powerful apparatus with filters, and, if possible, the introduction by perforation of a tube into the heart of the tumor. Finally, action of X-rays on the larger operated surface. This again exemplifies how surgery can establish new technics.

In uterine disease radium is of great use. I must say that no other auxiliary to surgery may be offered better than radium. These small, powerful tubes can easily enter into uterine tumors, and in many cases we have had relief, stoppage of blood, of secretions, and, in fact, produced great help. In combining in cross-fire the inside treatment with the outside application of apparatus of the abdomen we have obtained in some cases excellent results.

It must be known that if some cases, like cases of giant-celled sarcoma, respond admirably to the curative influence of radium, there are some others which up to now do not respond so well to radium; the mouth, for example, is a difficult region to treat, either because our technics are yet insufficient or because the region prevents application of sufficient length, the reverses are numerous. Thus for the mouth, more than for any other part, surgery must intervene first.

It is true that there are cases of cancer of the mouth where radium has succeeded; one on the hard palate, regressed more than a year ago, and still retains its good condition.

I come now to another side of the question—the emaniferous methods of which I have already given some hints.

As a certain amount of radium is consumed in utilizing the gas emanation, of course only a small quantity can be practically

employed. But this drawback is counterbalanced by two conditions, firstly, the radio-activity produced by induction and inference. The radio-active inference is due to a quality of the gas emanation which renders radio-active all the tissues that are affected by it, and make them act as radio-active substances themselves.

Secondly, the fact that the emanation can cover and affect very large grounds and surfaces.

The radium salts can be put in solution either by employing the soluble salts, bromide of radium, for example, or by employing the insoluble salts, sulphate of radium.

These solutions have been perfectly closed by Mr. Jaboin, chemist, of the Radium Laboratory of Paris, since 1905—they can be injected in the tissues—they can be incorporated into pharmaceutical substances, as quinine, etc., and be ingested by the mouth. They can be included in muds called radiferous muds, or spread on large towels. These muds and towels can wrap and cover the whole of a member, the abdomen, or the entire body. They can also be prepared as artificial mineral radiferous waters, and baths can be given.

If these therapeutic processes had remained in the realms of pure speculation, I should certainly not have spoken of them; but they have been put into practice.

It has been demonstrated that an insoluble injection introduced into a tumor produces a permanent radio-activity in the tumor. I have used with success a paraffine vaseline substance containing radium to spread it under a rebellious cancer nodule of the breast, and in applying at the same time an apparatus outside I performed a cross-fire, which reduced the nodule. In many cases I have supplemented the external treatment of cancer by injections of radium inside the tumor.

For treating gonorrhœic arthritis, injections of insoluble radium have shown themselves very efficacious. Injected in the general system in cases of leukæmia, the red corpuscles of the blood have been found increased in number.

I will not insist upon this side of the question as it is a new one, but without any doubt it shows a great future.

In conclusion, I shall feel happy if I have succeeded in demonstrating, without undue exaggeration, that radium must be considered as an important weapon, worthy of full consideration; that it does not interfere with surgery or X-rays, but, on the contrary, that it can be most usefully associated with surgical and X-rays treatment, and can even act beneficially when these methods of treatment cannot be employed.

THE COMPLETE PHYSICIAN*

BY J. GEORGE ADAMI, M.D., F.R.S., McGill University, Montreal.

“To each Athene and Apollo give some gift and each is worthy
in his place, but to this child they have given an honour
beyond all honours, to cure while others kill.”

It is right and fitting that some formality be associated with the entrance of the man into the direct preparation for his life's work—that the novice in medicine should not simply signalize his entrance into medical life by a humdrum and utterly commonplace visit to the University Registrar and a commercial transaction over the counter, but that he should participate in a ceremony which, however simple in its form, is, nevertheless, in its essence an initiation. This evening your Professors and the Faculty of Medicine formally but none the less sincerely welcome you. This evening formally you enter upon your novitiate in medicine—to-day marks the beginning of your life-work as members, even if junior members, of that well wishing band of those who devote their lives to the care of the sick and the maimed, to the prevention of disease and the raising of the standard of health, efficiency and happiness in the community.

* * * *

Happily there is at hand a text—or rather a whole bible—whereon to base my remarks. Indeed I do not doubt but that from one end to the other of this continent the inaugural lectures of the medical schools are this year being based upon this one document. I refer, of course, to the recently published report of the Carnegie Foundation for the Advancement of Teaching upon “Medical Education in the United States and Canada.” It is a work that is extraordinarily full of meat and so frank and fearless in its criticism of the various schools of medicine and their methods, or want of method, that action for libel has already been taken against its authors in more than one quarter and others promise to follow. It has stirred up the profession on this continent in diverse ways, but more particularly to realization of the ideals of medical training, of the possibilities and of present defects, to an extent that no individual man or association or plan of campaign has ever accomplished.

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What ideals, in the first place, should you have before you? What should be your estimate of the complete physician? What,

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Toronto, September 27, 1910.

Medicine, University of

therefore, should be the ideal course of training that you should place before yourselves? Let us think this out and then consider the means afforded to you for accomplishing these objects.

First and foremost as to the complete physician. He must be thoroughly trained in the practice of his profession. What does this mean? Not that when he graduates he is to be fully supplied with all the data concerning disease. That were impossible. The medical man is or should be learning new facts, new methods his whole life long: not five years, not ten years suffice to give him full knowledge. It does mean, however, that he shall be thoroughly equipped to know how to proceed in the making of a diagnosis and in affording rational treatment; that he shall, as I have said, be a thoroughly trained man. He must already have such close personal experience of the commoner ailments that he can recognize and treat them with sureness: he must be so equipped that approaching any case that presents itself he is able to utilize the appropriate modern methods of diagnosis, and, applying them, to come to a sound conclusion as to the nature of the disease, and from this be prepared to treat that disease rationally to the utmost possible degree. To do full justice to his patient, to possess for himself a quiet conscience, the practitioner must feel that he has accomplished all that is possible. I do not mean that he personally must be able to do everything for the patient, that he must combine all the specialties. But he must have that amount of knowledge which tells him either what he himself can do, or what may appropriately be done for the case by others rather than by himself.

What does this imply? It means that as regards ordinary ailments he shall already be thoroughly familiar with them. Lectures and books cannot afford that familiarity. He must have come into personal contact with them. This necessitates a long training in the hospital and the dispensary; in the dispensary that he may encounter abundant examples of minor ailments and more chronic ambulatory cases and learn thus to recognize their salient features; in the hospital, that studying at the bedside individual examples of more acute disease day by day he may gain a knowledge of the evolution and course of disease processes.

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But hospital and dispensary attendance of to-day is a very different matter from "walking the hospital" as known to previous generations. Our forbears depended for their knowledge and diagnosis of disease upon their unaided senses, and

undoubtedly, doing this, they trained certain of those senses, notably sight and touch, to a degree of acuteness that few in these degenerate days nearly approach. But, granting this, it must be acknowledged that their knowledge of disease was much more limited than what it is in your power to possess now-a-days, and that their treatment was in the strictest sense empirical. The advances have been rapid and remarkable: in the field of surgery they approach the marvellous. In little more than a generation medicine has been elevated from an art to a science, and to practice it the individual has to have a training in science and acquire the scientific spirit. To use rationally the instruments of precision now afforded to him he must have a sound training in physics: to utilize the information that the body fluids and discharges of the patient can yield him, to understand the action of the drugs he uses, and comprehend the normal and abnormal processes within the tissues, he must be so much of a chemist that he is familiar not merely with the principles of chemical action, but with the data of organic chemistry. Since the processes of disease are but the outcome of factors operative in health, either working in an excessive or a defective manner, to have any sane understanding of morbid states he must be well grounded in physiology—the study of the functions of the body in health—while to give him a broad and sane grasp of the principles that govern living matter, a course in biology is equally essential. It goes without saying that he must know human anatomy if he is to perform any operation, or have an adequate mental picture of the disturbances of the mechanisms of the body or of the individual viscera. Nor can he do his duty toward a patient suffering from one or other of the acute infectious diseases unless he has undergone a course in bacteriology and thereby gained a knowledge of the technique of bacterial diagnosis and of the nature of bacterial vaccines and antitoxic sera. And lastly, as the coping stone of this edifice upon which is based the scientific study of disease, he must in the post-mortem room and in the laboratory study the actual effects of disease upon the body, so that he may be familiar with the disturbances that may be set up in the individual tissues, and may, when he encounters his patient, have so vivid a mental picture of the association of disturbances likely to be present in any given form of disease, and indicated by the various symptoms and physical signs, that, as though provided with a mental fluoroscope, he sees that patient through and through and is able to picture to himself the effect that disturbance of the one viscus must have upon another and upon the system at large. For upon sound pathology depends pre-emi-

nently sound diagnosis, intelligent prognosis and rational treatment.

Think what all this means! For the prospective doctor in the first place. If he is to embrace the opportunities afforded to him in the hospital it means that before entering upon the study of medicine proper, he must spend years of preparation, years studying various branches of natural science. There is at present great debate as to where these years should in the main be spent. I see that the Carnegie report only places in the first class of medical schools those, sixteen in number, which demand that before entering the four years' course in the medical school, the student shall have attended a college or university for two full years. Not making this demand, Toronto and McGill, while referred to with approval, are considered as of a lower class. Here two questions may be asked, namely, "Is a college course and Arts degree essential for the complete physician?" and secondly, "Is the Carnegie Report justified in making the entrance requirements of a school the standard whereby to classify the medical schools of this continent?"

Now, gentlemen, let me confess that I find some difficulty in answering the first of these questions. As I shall point out later, knowledge of medical science is very far from being all that is required of the medical man, and, for his development, it is of the highest degree important, not so much that he have culture and an acquaintance with "the humanities" in the narrower sense, but that at the formative and most susceptible period of his career he shall have mingled and become intimate with those having various interests in life. Than this there is nothing more broadening. It is the generous intercourse of man with man, the learning to know and look up to and copy one's fellows for their innate worth apart from all sordid considerations, the mingling with and weighing all sorts and conditions of one's fellows—the education in humanity, rather than in the humanities—that constitutes the supreme value of an Arts course. He is a better man who has experienced this.

But, on the other hand, I cannot conscientiously urge that we demand of all our graduates eight years at the University, three in the Arts course, five in the medical school, or even seven years with but two in the Arts course. For one thing so prolonged a training leads a man to become stale—as we termed it at Cambridge. Intensive learning cannot be continued year after year without sapping the capacity to receive and perceive facts. Time and again I noted at Cambridge that men who had already won high distinction at Scotch universities in mathematics or classics

and who had come to the English university to gain further academic distinction along the same lines and sweep the board of prizes—academic hogs if I may so term them—were beaten easily by younger men fresh from the English public schools. They had grown stale. And at McGill we have noted as a common occurrence that the frequent B.A.'s among our students—of course there are brilliant exceptions—do but poorly in their first two or three years under us. In part this must be attributed to staleness; in part, I am convinced, to the fact that the more bookish academic training, if too long continued, actually unfits a man for the dissecting room and the laboratory and the frame of mind necessary for scientific research. As a rule in the final years these men get into their pace again and do excellently. Their brains are better trained organs and this eventually tells. But all the same I believe that they have wasted roughly a year of their student life; that they would have been equally capable and equally equipped with two years only in Arts. In short, I believe that the combined course such as is afforded in Toronto is educationally superior to what the Carnegie Report accepts as its ideal. Best of all is it that the student shall have had academic training of the broadest type, an education in literature and classics, and that he comes to the medical school fresh—not stale—to take up his scientific and medical work. But this the Carnegie Report does not contemplate.

Now, of course, the Carnegie Report presupposes not an eight but a seven years' course with but four, not five, years in medicine. In other words, it holds that biological subjects, physics, the principles of inorganic and organic chemistry are best given to the student before he enters the medical school. Here again I am prepared to join issue. There comes in here the matter of economy of effort. Take, for instance, the subject of chemistry, and let us admit, as will be admitted, that the student has already obtained his first ground-work in this subject at the high school. Which is the more economical, which will afford the better education, that the student attend the academic courses in this subject, courses devised for those intending to be metallurgists, commercial chemists, scientists of various orders, courses in which, from the natural delicacy of the Arts professor, the illustrations are drawn, as a rule, from every branch of chemical industry save the medical; or a course or courses forming an integral and graded portion of the medical curriculum, in which illustrations, equally valuable from the educational point of view, are afforded which have a direct bearing upon medical science,

illustrations which the student can apply in his later years, which must come into and be known by him in his later life work?

I speak feelingly, for I cannot but acknowledge that I have suffered permanently from the harmful effects of such an academic course. It was a course given by one who in his day was accounted the foremost teacher of chemistry in England. Without doubt I learnt something from it. I must have. But also I learnt to dislike the subject. All that I remember to-day regarding it is the waste of hours over details and diagrams regarding the vinegar method of making white lead or the white lead method of making vinegar—I really forget which, it does not matter—the various methods of making sulphuric acid, the properties of vanadium and other of the rarer metals. All these details which had to be learnt repelled me. I needed and longed for matter such as I obtained in the zoology course, run as it was by a man with a biological mind and not a systematist—matter which I could not but feel was golden grain that must germinate and bear fruit for my later studies.

The student has so much to do, so much to accomplish in the few years of his undergraduate course, that it is our duty not to burden him with unnecessary matter. I who say this do it with full meaning that I worked steadily for ten years between registering as a medical student and obtaining my diploma to practice. You must not think that this lengthening of the course is an American movement; America is the last part of the civilized world to fall into line. This ten year course was mapped out for me in its essentials in 1877. Wherefore I am convinced it is better that special courses be afforded for the medical student in the preliminary scientific subjects rather than he should attend the routine academic courses in the same: in other words that he should take up those subjects as a medical and not as an Arts undergraduate, and that the medical faculty should at least have the supervision over the courses in these sciences, even if they be given by the Arts professors and their staffs, and not in the medical college itself. Hence, I am convinced that our five years' curriculum at Toronto and McGill—a curriculum which allows us to guide and control the teaching of the preliminary sciences, which allows us to afford this with the greatest benefit to the student and the greatest economy of his time and labor—I am convinced, I say, that, educationally speaking, this is superior to the Statesian ideal of academic teaching of most of these subjects during a two or three years Arts course, with only four years spent in the medical school. So great, in short, is the economy, that though, as I have said, I prefer that the student

should have two years in Arts, I nevertheless believe that we can turn out a thoroughly sound medical man even if he comes to us merely with a good high school education.

Here parenthetically may I interject a word and a warning to the student before me. It bears upon what I have just been saying. I refer to the common failing of students as a body, that of regarding each separate subject and course as a water-tight compartment, something that has to be got up by itself, that has to be crammed up for examination purposes, and when the examination has been passed "Thank God, that's over and done with: now for the next." This is largely human, largely a survival of the attitude of mind fostered by a cast iron curriculum in the Arts course, in which perhaps the student may be pardoned for not recognizing fully the bearing of certain political economy, rhetoric or other courses that he is required to take. To some extent, but not entirely, it is the fault of us as teachers, that we do not sufficiently emphasize the constant interdependence of the various branches of medical science. I know that it is not entirely our fault. Thus as one means of breaking down this feeling, I give a course in elementary bacteriology at the end of the first year, as a direct continuation of the course in biology. Nay more, to make the relationship felt I give that course in association with the Professor of Botany. But notwithstanding, if in the examination I so frame a question that its answer demands reference to data and principles which have been treated by my colleagues in the biology lectures I doubt if ten per cent. of the examinees apply their biological knowledge and answer the question. Indeed I hear rumors of grumbling that my conduct is not exactly sportsmanlike. Of course they are only freshmen, but we want even freshmen to be something more than mere parrots. What on earth, or in the heavens, is the use of a man cramming his head with knowledge which is not to be applied?

All the same I think we teachers could do more to grade and dovetail our courses. It is impossible to do this by solemn inquisition of the whole Faculty. At McGill I have urged that in connection with each chair there be a consultative Committee of four or five, composed of professors of related subjects—in connection with my own subject of Pathology, for example: The Professors of Physiology, Histology, Medicine and Clinical Medicine, Surgery and Clinical Surgery—which committee should be called together by the holder of the chair once a year, that he may receive suggestions how more effectually to make his teaching supplement and help the teaching in the allied subjects.

And now I come to the question asked several minutes ago and still unanswered, namely, are the authors of the Carnegie Report justified in classifying the medical schools of the continent primarily according to the entrance requirements? I have no hesitation in answering, certainly not. It is not the *entrance* but the *outcome* that should determine the status of the school. Thus a school may demand an Arts degree for entrance, but if it has not proper control of a hospital or hospitals, if its students have not free entrance to the wards, or if, having that entrance, the hospital is so full of pay patients that the number of patients available for ward-work and bedside instruction is lamentably inadequate; if, therefore, the students have to be taught by the "case method," by written reports and details of real or supposititious cases rather than by the study of the actual palpitating patient; if, I would add, a school permits its students to begin to specialize before the too, too brief four years' course is complete; then I say in all confidence, it may turn out learned men, but as practical, capable practitioners, ready to do their work in the world, its graduates are not to be put on the same plane with the graduates of a school which, while affording a thoroughly sound education in the preliminary scientific subjects, and controlling that education, affords in addition the fullest clinical opportunities: a school which has trained its students to study intimately and abundantly the living patient.

* * * *

I have spoken more than once of the complete physician. Strangely enough the Carnegie Report passes over, so far as I can see, in absolute silence, a most important phase of his equipment. It has been said, and I think truly said, that the ideal physician is the man who knows and makes it his duty to treat the patient, not to treat the disease. The Carnegie Report deals only with the education that trains the man how to treat the disease. One rises from reading the Report with the impression that he is the most fully qualified practitioner who has the fullest knowledge of the data of disease, the best training to treat each case as a subject of scientific research. The ideal hospital, we are told, for teaching purposes is that in which the medical and surgical departments are directed and controlled by university professors without private practice who devote their whole time to teaching and research. Such a hospital, I freely grant, will turn out the greatest mass of valuable papers and monographs upon disease. Will it turn out the best medical men? I know that this may sound heretical to sundry of my hearers. I know that as a professor of the science of medicine you will expect me

to take the view expressed in the report. But while I am a Professor of Pathology and while my home was not that of a medical man, I have in my veins the blood of five successive generations of country doctors, and I feel it in my bones that the view is mistaken, or at least must be received in a modified form. It is inevitable in a hospital so conducted that the staff from the heads of the departments downward regard the patients not as human beings to be cured but as cases to be investigated. The inevitable tendency must be that the students trained in such a hospital go out into the world with the conception that their duty is to treat the disease. Now I say straight out that this training does not make the complete physician. It makes the relative failure.

Let me read you a parable from my own experience. When I passed from Cambridge to the hospital I became acquainted with two men. The one had already for two years been house physician. He had passed through a distinguished course in Arts, had carried everything before him in the medical school, had obtained, if my memory does not fail me, the gold medal in medicine at the London University—which in many respects may be regarded as the blue ribbon of the English medical student. But he was poor and had to make his own way, could not afford to hold on longer connection with the hospital or to announce himself as a consultant and wait for others to send him patients. At the end of this year, therefore, he mounted his brass plate in one of the artisan suburbs of the great city, in the hopes that even if individual cases did not afford high fees, the teeming population would afford abundant work and opportunities for practice. I may add that his morals were irreproachable: he was of the “unco’ guid,” a leader in the prayer meeting movement. Now there was in the final year another man, a very different character. He had entered the school at the same time as the former. That he had ability there was no question. The way in which he kept the students’ common room lively was in itself evidence of that. He was not, however, what might be termed a model student. The fact that he had taken three more years to get his license rather enforced this conclusion. In fact, although somehow one could not help liking him, he was more than a little bit disreputable. We may put it that he enjoyed the society of his fellows more than that of his books. One heard of him attending race meetings, one heard of his exploits in sundry bar-rooms, one saw him very cheerful and distinctly prominent at the annual dinner. If you paid one of your rare visits to the theatre you came across him there so much at his ease, hail fellow well met with everyone, that it looked as though he had perpetual

entry. And when, supplies failing, he at last found it necessary to scrape through, his record did not recommend him for a hospital appointment; it did not recommend him for a partnership or establishment in any first-class neighborhood, and as a coincidence he lighted upon the same second-class suburb as the first and set up his plate at the opposite side of the road. Here is the point: by the end of the year the first of the two was still going on foot. I was informed that scarce a baker's dozen of patients had called him in. The second was already doing so well that he could hire a trap. By the end of the second year he had invested in a dog-cart of his own: at the same period scarce one of the baker's dozen of patients had called our first friend in again: they had not even recommended him to their acquaintances: the prospect was so hopeless that he had taken down his plate and was leaving the neighborhood. I hear of him now after years of struggle as a consultant of moderate reputation, the only position he is qualified to fill. Even here his lack of humor prevents him from being a full success; he treats the patients he sees for a brief quarter of an hour as cases, not as living and frail human beings: he does not create a bond of human sympathy between himself and the practitioner who calls in his aid. The practitioner selects him in the hope that his extensive knowledge, his familiarity with recent literature, may be of use in suggesting some other method of treatment. The ideal consultant, you will find, is on good terms with his patient in two minutes, in five he has become such an old friend that the patient is exposing freely all his or her foibles and anxieties, in fifteen he has so thorough a grasp of the character and disposition of the patient that he can proceed to treat him or her over and above his or her disease. That, gentlemen, is what you have to strive after. I do not suggest to you for a moment that you take my second friend as your example, but in citing his case I assuredly want to impress upon you that the sympathetic study of your fellow-men and fellow-women, the capacity to enter into their lives, to see the world from their standpoint, this is the primary *desideratum*. He had acquired this, and to it was due his limited but nevertheless very real success as a practitioner. You can do the same without frequenting race tracks and bar-rooms, without cutting lectures and hospital work. There is abundant humanity to profit from, even in the Y. M. C. A. The ancient philosopher laid down as the maxim for self-rule and self-content, "Know thyself." The rule, I maintain, for the complete physician is "Forget thyself, know thy fellow." After all it is the old, old lesson that I have to preach to you. Though you know all the ologies and practice all the modern methods of diagnosis and treatment, though you

know Latin, German, French, Italian and "speak with the tongues of men and of angels and have not charity—do not let your hearts go out to your fellows—you are become as sounding brass and as a tinkling cymbal."

It has been the main glory, the main strength of British medical education, that it has recognized this, the main weakness of German medicine that it has too largely neglected it. Do not think from this that I depreciate the university hospital as a centre for medical research. I doubt if anyone here more fully appreciates its importance in this relationship than I do. By all means I would say appoint a paid Professor of Medicine and a paid Professor of Surgery to devote their days to teaching and research, but let them be each "*primus inter pares*," giving them the deciding voice in matters of teaching within the hospital, but by no means give them the control of all the wards. On the contrary, give them direction purely of a ward or wards that may be devoted to the study of particular diseases and conditions, on the study of which they for the time being are concentrating their energies: give them the right to all cases of one or other order that present themselves at the hospital. Patients are only too glad to think that they are being made the object of intensive study. My old Cambridge friend, Dr. Strangeways, has proved this to the hilt. At present he and his colleagues in the hospitals he has established are studying rheumatic arthritis and, knowing this, patients present themselves for admission from all over England. As regards the main mass of the beds, place these in the hands of certain leading physicians and surgeons of the city, who at the same time through their work and power of teaching are recognized members of the medical faculty. The very fact that these men have gained leading positions is proof positive that they possess the supreme gift of sympathy with and understanding of the patient. It is from these men as they pass from case to case and from bed to bed that the student will learn the invaluable lesson of the approach and study of the individual. I would even go so far as to say, make a point of appointing to the staff the leading family physician of the city as distinct from the consultant or specialist. He may not be able to lecture "worth anything." Do not expect him to. But the students who accompany him round the wards are likely to obtain lessons of greater value from him than from any other single member of the staff.

As already stated, it is for its value in this study of humanity that I particularly esteem the years spent in the Arts Faculty. Similarly for its formative value I entreat you, gentlemen of the freshmen year, to enter heartily into the life of your year of the Faculty. Work heartily, work thoroughly, but do not be book-

worms and smugs. Mingle freely with your fellows, study them and get to know them—yea, regard it as a treasure of price if you have the fortune to gain the entree into the homes and family life of the citizens of this good city.

Lastly, although I believe that the new fifth year, spent as it will be largely in the hospital, will be magnificent training, I would urge every one of you to strive by every means to spend one or two years as a resident in some hospital before embarking in general practice. You may ill be able to afford the expense, and it may seem as though you are casting your bread upon the waters. I could only assure you that the loaves will be returned to you a hundred fold in the years that are to come.

An education such as you receive here in Toronto, the rational and necessary training of a capable physician, already let me impress upon you, costs double as much as either you or your parents pay for it. It is to the interest of the State that you should have the best possible education. But the result of the enormous increase in the cost of a modern medical education is that the proprietary medical school which in the past flourished in Canada, as it has done in the States to an even greater extent, is doomed. In competition with the schools connected with reputable universities it cannot afford the necessary expenditure without a heavy deficit. Within the last year no less than twelve of these have disappeared. The ungloved revelations of the Carnegie Report must result in the disappearance of all of them, and with them will go that manufacture of the crude unfinished article that has been the discredit of American medicine, the article poured out in such quantities that, compared with European, and it may be added, with living standards, this continent possesses at least four times as many medical men as are necessary. There is no need to-day, there is no place for the poor *untrained* student. The poor trained student is a very different matter. With the reduction of the output the well-trained man need not fear as to his future. Looked at purely from the commercial aspect, gentlemen, you can well afford the extra time necessary to make you sound practitioners.

It is to the interest of our universities, and for their reputations, that a thoroughly trained product be turned out, that quality not quantity be the goal. But unaided they cannot bring about the elevation of the medical profession. They need the support of public opinion and of the State. They must have, I would particularly add, the support of the provincial licensing bodies. What is the use of the University doing its best if the examination afforded by the provincial college of physicians and surgeons is of such a nature that it permits improperly quali-

fied men to creep and intrude and climb into the fold? From what I have seen I am wholly at one with the contention of the Carnegie Report, that the method of examination followed by the state and provincial licensing bodies is imperfect. It must be so when we find that some of the notoriously inefficient schools of this continent—schools without proper laboratory equipment, without clinical facilities—pass as large a proportion of their graduates as do the reputable schools. The examination being purely written and oral upon set subjects, the student has only to obtain the questions set for the last three or four years to find out what is expected of him and floor his examiners. It is merely a matter of pernicious cram. Your trained teacher can distinguish between genuine knowledge and parrot-like statements of undigested facts. And so long as the professional teacher is regarded as anathema by the provincial board for so long must the examinations lay themselves open to criticism. I do not ask that the University be given control: far from it; but when it is the object of both University and Provincial Board or college to give their "*exeat*" only to fully qualified men let the general profession of the province and the universities be united in this matter of examination. And, I would add, let competent practitioners make the examination a genuine test. Make the examination practical. Let competent practitioners test the candidate at the bedside. I know the difficulty in carrying out this recommendation. It means a great increase in the length and in the expense of the examination, and this extra expense ought to be borne by the candidate, who nevertheless at this particular period of his career is least able to bear it. I do not see, however, why it is not possible to place the candidate under bond, and require of him payment in instalments over, say, five years.

I could worry my text to much greater length, but must by now have stretched your patience to breaking point. If I have criticized the Carnegie Report I ask you not to go away thinking that I depreciate it. On the contrary. No one interested in the future of medical education on the continent but must welcome it and its fearless review of defects, even if it itself is not without defects. A strong, progressive school has nothing to fear, everything to gain from it. The loud squealing of the institutions whose nakedness, poverty and false pretences are exposed to the light is only natural. All I have to point out is that the Report does not cover the whole field: that we can go farther than the Report. Sound training in medical science is an essential, but you, gentlemen, if you want to develop into the complete physician, must add to this knowledge of, the sympathy for, the love of your fellow-men.

CASES ILLUSTRATING THE USE OF THE ELECTRO MAGNET IN OPHTHALMIC PRACTICE

BY G. STERLING RYERSON, M.D.C.M., L.R.C.S.E.,

Professor of Ophthalmology and Otology in the University of Toronto.

Last summer I had the pleasure of spending three days at Zurich and of following the interesting clinic of Professor Haab. The Professor is one of those quiet, thoughtful, painstaking persons who are to be found so frequently in the profession, and one who is ever ready to welcome a foreign colleague. Haab has done much good work in various departments of ophthalmology, but the work which has made his name a household word among ophthalmologists the world over is the introduction of the magnet in the removal of foreign bodies from the eye. He devised a giant magnet, which is applicable to many cases but not to all. Smaller hand electro magnets have been devised by Hirschberg, Lippincott, Johnson and Sweet; all or any of them will be found most useful and very much less expensive than the giant magnet of Haab and more easy of application.

It may be of interest to quote the statistics of Haab, published in 1908, in order to show what has been accomplished by the use of the magnet in saving eyes.

Haab's Statistics—

Total number of eyes.....	165
Number of failures	23
Number of eyes from which splinters were extracted.....	141
Number of eyes requiring enucleation.....	39
Number of sightless eyes preserved.....	19
Number eyes requiring cataract operation (51 recovered useful vision)	71

Writing of his experience with the giant magnet, Haab says: "Of the whole number of 165 cases in my experience, the operation failed 23 times. It was successful in 141 cases, or in 86 per cent. If we consider the 134 difficult cases in which the splinter penetrated behind the iris and the lens, we find that in these 134 cases the large magnet failed only 23 times to extract the splinter from the eye and was successful in 111 cases, or 83 per cent."

These failures were due to the following circumstances:

"1. The foreign body was seated too firmly in the back wall of the globe or had pierced it completely.

"2. The splinter was seated in the ciliary body at first or was drawn there by mistake.

"3. The splinter had produced fibrino-purulent exudation, which, according to my experience, greatly hinders its movability."

It seems hardly necessary to state that the magnet has no influence on any substances but iron and steel.

I have been using a Johnson electro hand magnet for some time, and with one exception the results have been good. I might add that I successfully extracted a needle imbedded in the base of the tongue, but as Kipling says, "that is another story."

A young German working in a machine shop was struck in the eye by a foreign body. Various attempts to extract it were made without success, so he decided to leave it alone. Six months later it began to give him trouble and he came to me. I found a dark spot under the conjunctiva near the upper and inner quadrant of the iris. Under cocaine and after several ineffectual attempts, having made an incision through the conjunctiva, I succeeded in extracting a lamella of steel with jagged edges 2 inches in length. It would appear to have been imbedded in the sclera, hence the difficulty in dislodging it.

A young machinist was sharpening a penknife when a piece broke off and struck him in the cornea. His family doctor endeavored to remove it, but without success, and referred him to me. I found a round opaque spot in the cornea at its inner and upper part, having the appearance of an abscess. There was no sign of a foreign body, but a probe revealed a gritty substance. I used the magnet and withdrew a spicule of iron. There was some infection in this case. The patient had iritis, but made a good recovery.

The third case is that of an engineer who had occasion to strike an iron bolt with a hammer, when a piece flew off and penetrated the cornea. It could be seen quite plainly lying on the anterior surface of the iris. I made an opening in the cornea as for iridectomy and introduced a flat spatulate shaped magnet tip and withdrew the foreign body. The case made a rapid and uneventful recovery.

My last case is that of a steamfitter who in the course of his work was struck in the eye by a minute particle of iron. The eye

was filled with blood and nothing could be seen. A skiagraph having been made by Dr. E. E. King, a small foreign body could be seen on the plate.

Under cocaine I made an opening in the sclera and introduced the magnet tip in the place where the skiagraph showed where the foreign body should be. In spite of several attempts, I was unable to find or withdraw the spicule. This case is still under observation.

I would suggest that every machine shop should be provided with a small electro magnet. In my experience a large proportion of the small foreign bodies could easily and painlessly be removed by it.

Selected Articles

A PRELIMINARY REPORT ON EHRlich-HATA PREPARATION FOR THE CURE OF SYPHILIS

BY M. S. KAKELS, M.D., NEW YORK,
Adjunct Surgeon to the Lebanon Hospital.

In the latter part of August I received from abroad a number of tubes of Ehrlich-Hata preparation, No. 606, for trial on luetic patients. From the brilliant reports and successes published in the German literature one cannot dispute the specific virtues of this new remedy. In order to give this preparation a fair test I determined to use it only on such tertiary or malignant cases that had not yielded to any previous treatment. My first patient I injected on September 4, 1910; my second on September 7, 1910. Up to to-day (September 15) the results thus far obtained have been beyond expectation. The time elapsed from the injection to the publication of this report is too short to offer it as a complete observation of the results and final effect of the remedy, but the rapid and astonishing changes that have already taken place fully warrant me in offering these brief histories for publication as a preliminary report, and at the same time to confirm the brilliant reports which the German clinicians have recorded. The further details and results of these cases and others will be fully published in a later article after sufficient time has elapsed to warrant us in expressing an unbiased opinion of the efficacy of this epoch-making discovery. The remedy is being used according to the strict instructions of Professor Ehrlich. It is only injected in syphilitic patients, free from other organic lesions, either of the liver, kidney, heart or circulatory system. The eyes are examined in every instance for optic nerve lesions. It is also only injected in patients who are under hospital surveillance where accurate records can be taken.

Case I.—H. S., 24 years of age, single, occupation painter, was admitted to the Lebanon Hospital in the service of Dr. Roth on August 11, 1910. Since August 8th he had acute pain in the region of the gall-bladder. The onset was sudden and accompanied by chilly sensations. No jaundice. Physical examination was negative except for a large mass in the gall-bladder region which seemed to communicate with an enlarged liver. The right border of the mass extended to a vertical line situated through a point four inches from the umbilicus. The left border of the mass ran into the lower edge of the liver, which was found to be two inches below the xyphoid cartilage. From the costal margin

to the lower edge of the tumor the growth measured 4 inches; its width was $2\frac{1}{2}$ inches. The spleen was enlarged and readily palpable.

The patient acquired an initial sore in March, 1907, and was treated by different physicians until June, 1907. From June, 1907, for three years he was given hypodermic injections of mercury.

After his acute symptoms had subsided Dr. Roth made an exploratory laparotomy and found that the tumor mass was a gumma and was inoperable. The large liver was infiltrated with gummatous masses. The pathological report of a section of the tumor confirmed the operative diagnosis. The wound had almost entirely healed when Dr. Roth kindly turned the patient over to me for the injection of the Ehrlich preparation. A Wassermann reaction a day before the injection was strongly positive. On September 4, 0.3 grm. of Ehrlich-Hata 606 was injected subcutaneously under the scapula according to Michaelis' method. Twenty-four hours after the injection there was already a marked diminution in the intensity of Wassermann's reaction. There were no local symptoms at the site of injection, although a very slight pain was experienced, which disappeared at the end of a few days.

There was a slight rise of temperature (100.8°) on the ninth day. On September 5 there was a leucocytosis of 10200. There was no change in his general condition following the injection. His appetite improved. The small ulcer at the site of the incision which had not entirely healed when he received his injection was entirely healed on the second day thereafter. On the 9th of September, five days after the injection, there already was perceptible by palpation and percussion a marked diminution in the size of the tumor. The liver also was as markedly diminished in size and the spleen also. There are no changes in his eye and he is gaining in weight. The third day after the injection there was well-marked evidence of still further diminution in the intensity of Wassermann reaction.

On the 14th of September the tumor had diminished fully an inch in circumference and the liver very markedly retracted from the abdominal wall and markedly decreased in size. The spleen was also smaller. There was a leucocytosis of 9200, his urine is negative and his weight has increased five pounds in nine days. He has been examined by several of the visiting staff, as well as by other physicians who were invited to examine him, and all agreed to the remarkable rapidity with which the growth is decreasing. I have never seen a pathological mass melt away so rapidly.

The second case is still more remarkable, and I can only state, in short, that Ehrlich's remedy in this instance was life-saving. Not only was the patient's life saved, but he is being rapidly restored to health.

Case II.—Henry P., age 36, bartender by occupation, acquired an initial sore in June, 1907, followed by a papular eruption. In September, 1907, there appeared deep sores on the neck and flexor surface of his extremities, which healed after three months, leaving scars which are still visible. In December, 1907, he was deeply jaundiced, had an enlarged liver and was rapidly losing weight. He had pain in swallowing. There were plaques on his tongue. The epiglottis infiltrated and swollen. In rapid succession ulcerations appeared on the soft palate, tonsil, epiglottis and glottis so that the patient could swallow liquids only after the application of an anæsthetic had been made. He had sleepless nights on account of the pain and accumulation of mucus. Although slight improvement set in there still persisted lesions on the skin and mucous membrane of a destructive nature. In June and July of 1909 there were relapses of the ulcers of the larynx and marked destructive changes in the epiglottis. There was a gumma in the naso-pharynx, the left wing of the nose being gradually destroyed by an ulcerative process. There were ulcerative sores on the lips, with marked destruction of the tissues.

About the middle of August, 1909, the patient was admitted to the German Hospital. He left the hospital in October, 1909, very little improved. During all this time he received the most active antisyphilitic treatment. On September 5 I admitted him to the Lebanon Hospital from the German Hospital, which he had re-entered in November, 1909, and where he had remained until he came under my care for the injection of Ehrlich-Hata preparation.

His condition at this time was pitiable. For weeks he had been bed-ridden on account of a large and deep ulcer over the left external malleolus, which measured 2 x 3 inches, the result of a gumma which had existed for over eight weeks and then had broken down. There was another soft gumma on the instep with the overlying skin reddened and ready to break down. On the upper third of the left tibia there was a hard and painful gummatous infiltration. On the lower portion of his face there existed a large number of old and recent cicatrices. The lips and nose were distorted by excavations. A number of small and deep ulcers of a punched-out appearance were visible on the cheeks, nose and lips, all covered with a nasty and yellowish discharge. A large defect about the size of a five-cent piece on

the right side of the nose near the tip, the result of a broken-down gumma, was still covered with broken-down tissue. None of these sores showed the least tendency to granulation. Especially the large ulcer on his malleolus was absolutely pale and indolent looking and still in a breaking-down state.

Dr. Bullinger, who had treated the patient before he entered the German Hospital, and who kindly referred him to me with the kind permission of Dr. Klotz, the visiting dermatologist to the German Hospital, had used the inunction treatment several times. He also gave hypodermics of mercury, enesol, and atoxyl in larger doses than are generally prescribed. He also received injections of arsacetin. From time to time during these various methods of treatment periods of slight but evanescent improvement were apparent. The patient quickly relapsed into his deplorable condition. Iodide of potassium was also given. Sulphur baths were taken in Mt. Clemens, but with no other result than that he was advised to return home by the physician in charge, who expected him to die in a few weeks.

In the above-described condition the patient entered the Lebanon Hospital. Besides these ulcerative and rapidly destructive lesions the patient had mucous patches in his mouth and ulcers on his tonsils which prevented him from eating or swallowing. He was despondent and depressed and in such a desperate condition that he had to be watched the first night he was in the hospital for fear he would commit suicide. His temperature on admittance was 99°, his leucocytosis 8200, the urine had a very faint trace of albumin, his weight was 101 pounds. He was unable to walk on account of the pain and large ulcer on the foot. His other organs were normal. Dr. Denig, the ophthalmologist to the German Hospital, and Dr. Heller, adjunct-ophthalmologist to the Lebanon Hospital, kindly examined the eyes, and found a cloudiness, evidence of syphilitic neuritis. The Wassermann reaction before injection was strongly positive. I injected him with the kind assistance of Dr. Bullinger, on September 7th, with 0.3 grm. of Ehrlich's preparation subcutaneously in the subscapular region. The large infiltrated area was massaged and cold applications were ordered to be made.

The patient experienced but little pain, although a very large swelling developed and persisted for some time. Temperature on the second day, 100.6°. The intensity of Wassermann reaction twenty-four hours after the injection was markedly diminished. Leucocytosis twenty-four hours after injection, 18,400. Already on the second day a marked improvement in the many ulcerative processes was apparent. The nasty discharge had subsided, a drying up of the ulcers was taking place. There

was no more breaking down of tissues. Granulations were commencing to appear. The patches in his mouth and on his tonsil were disappearing. The patient could swallow, was more cheerful and his appetite was better. In fact, a remarkable change had taken place, which was observed by all who examined him.

All these improvements rapidly continued so that on the 14th day of September, one week after the injection, an astonishing difference in the condition of the patient is apparent. The ulcerations and pustules have disappeared and are nearly all healed and covered by scabs. The broken-down gumma on his nose is filled up with healthy granulations and healthy epidermis is already growing over the defect. The large and deep and undermined ulcer over the malleolus is filled to the surface with active and healthy granulations and commencing to epidermize. His face is clean, he is able to walk, the pains have left him, the gumma on his tibia has almost entirely disappeared, the soft one on his instep almost entirely absorbed. He is not ashamed to walk about the wards. He is more cheerful and happy and has a new lease of life. He has been examined by many physicians who have seen him before and after the injection, and all expressed astonishment at the rapid improvement, and this after only one week's time and but one injection of 0.3 grm. Surely a marvelous result.

Ehrlich-Hata 606 has not only saved this patient's life, for he was gradually failing, but in a week's time has stayed the active destructive processes caused by the *Treponema pallidum*, and is rapidly restoring him to health. What remedy in the whole domain of the pharmacopœia can accomplish this?

Mankind truly is indebted to Prof. Paul Ehrlich, and owes him a great measure of gratitude.—*Medical Record*.

A PERILOUS REMEDY

Professor Bouchard, in a communication to the Paris Academy of Science, warns the public that the efficacy of Professor Ehrlich's "Preparation 606," of which so much has been heard recently, has by no means been demonstrated. Professor Bouchard declares that the preparation has already caused numerous deaths of patients, and that only recently a man died in a Paris hospital after five injections had been made. The French savants are experimenting with the preparation, but the serum is stated to be extremely dangerous, and must be used with the utmost caution.—*The Medical Press*.

Progress of Medical Science.

MEDICINE.

IN CHARGE OF W. H. B. AIKINS, F. A. CLARKSON,
BREFNEY O'REILLY AND F. C. HARRISON.

Bronchial Asthma as a Phenomenon of Anaphylaxis

Meltzer (*J. A. M. A.*) observes that it is generally agreed that the so-called nervous asthma is due to a stenosis of the bronchioli. It was discovered that the so-called anaphylactic shock is due also to a stenosis of the fine bronchi. The theory is offered that asthma is an anaphylactic phenomenon; that is, that asthmatics are individuals who are "sensitized" to a specific substance and the attack of asthma sets in whenever they are "intoxicated" by that substance. It has been proved that the anaphylactic attack is of peripheral and not of central origin. It is therefore suggested that the so-called nervous asthma is also due to a peripheral and not a central cause; in other words, "nervous" asthma is not a neurosis. On account of the capriciousness of the onset and courses of asthmatic attacks, as well as on account of the absence of pathological anatomical changes in this affection, asthma was considered a functional disease and hence a neurosis. He thinks that asthma is still a functional disease but not a neurosis.—*New York Medical Journal*.

The Treatment of Migraine

The following prescriptions are recommended by Rankin (*Clinical Journal*): (a) chloride of ammonium, 15 gr.; phenacetin, 10 gr.; codeine, 1-3 gr. (to be dispensed either in the form of a powder or of two cachets); (b) antipyrine, 10 gr.; salicylate of soda, 10 gr.; tincture of gelsemium, mxv.; spirits of chloroform, mxx.; water to one ounce; (c) heroin, 1-12 gr.; dilute hydrobromic acid mxxx; citrate of caffeine, 5 gr.; compound tincture of cardamom, mxx; chloroform water to one ounce. In the case of all of them directions should be given for a dose to be taken every two hours for three doses; and every four hours thereafter until the pain is relieved. In women when the migrainous attacks recur only at the menstrual times, the use, for a week before each period, of a mixture of chloral hydrate,

10 gr., and bromide of sodium, 20 gr., given 3 times a day, is often successful, he states, in suppressing the attack or in diminishing its severity. When the temporal artery on the affected temple is prominent and throbbing, steady pressure over it may succeed in affording temporary relief.—*American Medicine.*

Megacolon and Infantile Paralysis

Baumel (*Journ. des prat.*) relates the case of an infant suffering from poliomyelitis anterior, which was accompanied by a condition to which he gives the name of "megacolon." The child had been in perfect health, and as is so frequently the case was suddenly attacked by a severe form of infantile paralysis, which followed a normal course up to a point. During the progress of the illness a large soft swelling was observed occupying the right side of the abdomen, which increased in size whenever the infant cried. This was found on careful examination to consist of the ascending colon. The author, while not altogether rejecting the view of Hirschsprung that the condition is due to some congenital fault, states that this is insufficient in itself to explain the large increase in size of the colon. He points out that, by analogy, dilatation of the heart and other hollow viscera does not occur unless in the presence of some obstacle to their ordinary physiological functions. In place of Hirschsprung's hypothesis, therefore, the author suggests the presence of a stricture, or compression of some part of the large intestine. On further examination, such an obstacle was found in this case, impeding the course of the contents of the large intestine, and materially assisting in the dilatation of the colon referred to. He then points out that beyond this circumstance in the particular case under notice, there is a definite relationship between the condition of megacolon and infantile paralysis. He advances the hypothesis that the stasis of fecal matter in a largely dilated colon may quite well bring about the absorption of toxins having a specific action upon the nervous system. On the other hand, he sees no reason to doubt that if paralysis of the abdominal muscles occurs in infantile paralysis, a similar condition may take place in the case of the intestinal muscles, the extreme dilatation of the colon which he calls megacolon being the result. As to treatment, electricity must be used for the paralysed muscles, supplemented by an elastic belt. Massage of the abdominal wall in the course of the colon, and antiseptic lavements of the large intestine are further aids to the treatment.—*British Medical Journal.*

Present Status of Treatment of Exophthalmic Goiter

Jackson and Eastman (*The Boston Medical and Surgical Journal*) are of the firm belief that in practically every case it is our duty to treat the patient medically for three months. If at the end of that time no improvement has taken place, preferably ligate the vessels. This may effect a cure. If it does not, and the patient later comes to the operation of partial thyroidectomy—which is as yet the most satisfactory of the radical operations—the ligation will make the operation easier and less dangerous. If the goiter is very large, it is well to remove only the larger lobe and then treat the remaining lobe with the X-ray and medical procedures. Patients who show beginning cardiac failure should be operated on as soon as possible after being put in fair condition by medical treatment. Many cases, however, come to the doctor only after the myocardial changes have begun. Patients in this condition must be treated as cases of advanced myocarditis, for all treatment beneficial to this condition is also beneficial to the exophthalmic goiter. The strictest rest, with ice bags over the heart and thyroid, a carefully regulated diet, the hydrobromide of quinine, and, if necessary, the cautious use of strychnine and bromides is the treatment to be carried out. We must not expect an absolute cure in the cases in which the myocarditis is advanced, though symptomatic recovery does sometimes occur, and we can hope only to lessen the symptoms and make life better worth living for the patient and the patient's family. In the earlier cases we may be able to effect a cure, and if not we may, by careful medical treatment, improve the condition to such an extent that the patient can be operated on with much less danger than before treatment.—*J. A. M. A.*

Myasthenia Gravis (*Journal of Nervous and Mental Diseases.*)

In this case, which was studied rather carefully and had at the beginning some appearances that might lead one to think of hysteria, a story of fright was obtained, following immediately by the gradual development of all the symptoms of myasthenia gravis. The patient was a young woman of 24, a cashier. She was very sensible, with no caprices, no nervous symptoms, and none of the faults of disposition usually set down as due to a tendency to hysteria. She had been in perfect health, missing no time, undisturbed by the menstrual periods, with regular bowels and a good appetite. She was a favorite in her own family.

One evening in 1906 a brother was brought home dead. She was at home when he was brought in and she suffered severely from the shock, swooning away and then afterward vomiting. She was better after half an hour, but she did not sleep that night and felt nauseated during most of the next day. She was unable to eat much for several days and headaches developed. These headaches were very severe and continued even after her appetite returned to a great degree and when she thought that she was quite well otherwise. When she returned to work after the funeral she found that she was very easily tired and that her eyelids began to twitch. The left one was the first to be affected, but both bothered her after a short time. After the twitching had continued for some time she would find it easy to open her eyes, but rather hard to keep them open and the lids would droop. Speech became very tiresome to her too, and then after an interval she would be worse, and at the end of six weeks she found it very difficult to hold her eyelids up or to talk much, and some difficulty of swallowing developed. These symptoms of gradual loss of use of the muscles continued to develop for six months with certain variations. She died December 23 from sheer weakness of the respiratory muscles, together with the malnutrition consequent on difficulty of swallowing.

The course of the case was typical of myasthenia gravis, except that the intermissions were perhaps more marked than are usually seen. The authors suggest that the secretion of the thymus gland represents some material that maintains the tone and the vitality of the dark red muscle substance. When this diminishes the white substance overgrows somewhat according to that law which seems to hold in all the tissues, that the disappearance of one form of tissue leads to hypertrophy of neighboring tissues of other kinds in the same order. It is possible that the thymus may have the double function of maintaining the vitality of the dark red muscle substance and inhibiting the light red muscle substance. Such double functions are rather common and are to be expected in nature. The shock or fright that represents the beginning of this case of myasthenia gravis may have disturbed certain trophic nervous influences that enabled the thymus gland to do its work.—J. A. M. A.

Atropine in Gastric Ulcer and in Internal Medicine in General

Schick (*Wien. klin. Woch.*) reports the prompt healing in some very serious, obstinate cases of gastric ulcer under a systematic course of atropine, and he expatiates on the importance of

this too much neglected remedy in internal medicine. His experiences parallel those of von Tabora; the atropine evidently soothed and relaxed the musculature of the stomach and pylorus while checking the gastric secretion. When all other measures have failed and operative treatment seems indispensable, he injects subcutaneously, twice a day, from 0.001 to 0.0015 gm. atropine sulphate, morning and evening, keeping this up from 4 to 10 weeks with the patient on a milk-cream diet. The healing of the ulcer in his cases was counteracted by motor insufficiency of the second degree and hypersecretion. The atropine paralyzes the vagus innervation of the stomach, which is evidently functioning abnormally in these cases. The subjective symptoms subside generally at once, and perseverance with the atropine reduces the tendency to excessive secretory functioning. The frequent discovery of vagus irritability with gastric ulcer is more than a casual coincidence; each aids in producing a vicious circle, fostered still further by reflex action. He has found atropine useful also in treatment of spastic constipation, spasmodic asthma, pylorospasm, lead colic, cardiospasm and gall-stone colic. By the relaxation induced by subcutaneous injection of atropine, the walls of the ducts allow the stone to pass along or to fall back into the gall-bladder. This treatment, he believes, might prove useful also in kidney-stone colic; Loewi has reported brilliant results from atropine in reflex vasomotor angina pectoris. Surgeons might find atropine useful also, Jianu says, in preparing patients with the status lymphaticus for operation. It is also useful to differentiate spastic contraction of the stomach from organic retraction of the stomach walls; in several cases of hour-glass stomach Schick noticed various signs indicating extreme excitability on the part of the vagus. Before giving atropine, the condition of the nervous system must be carefully investigated. If the vagus is abnormally irritable the drug can be given with confidence, he states, up to 0.001 or 0.002 gm. a day. In the absence of signs of abnormal excitability of this part of the nervous system the greatest caution is necessary; active delirium and other serious by-effects may be observed when the exact indications for it are not heeded.—*J. A. M. A.*

Central Origin of Some Cases of So-called Heart Block

Commenting on the report of temporary improvement in some cases of Stokes-Adams heart-block, J. F. Goodheart (*Lancet*) says that he is unable to understand how temporary recovery can take place when the lesion is due to some change in

the heart muscle, gummy, fibrotic, fatty or calcareous as the case may be, and consequently he cannot accept the current theory of the cause of all Stokes-Adams disease in every instance. In many instances of patients with cerebral symptoms commonly ascribed to this form of heart lesion the fact is that these people with heart disease never faint. In many of these cases it is difficult to say whether the brain or heart is primarily at fault. He has seen several people in the declining decades of life who have first shown illness by way of the brain, such as vertigo, temporary weakness of one side, loss of conscious or mumbling speech, who only after such attacks have their hearts shown vagaries of action. Many of the so-called Stokes-Adams cases which recover are really epileptic seizures.—*Medical Record*.

Rheumatoid Arthritis

P. W. Catham in *The Lancet* brings forward again his theory that the joint and muscle changes occurring in this disease are due to irritative and destructive lesions in the cervical and lumbar enlargements of the spinal cord. He quotes various authorities and reports cases tending to show a relationship between external irritations, particularly from the pelvis, and muscular and arthritic affections, and gives in detail the microscopic examination of the cord from a case of chronic rheumatoid arthritis with muscular atrophy, as reported by Mott and Tredgold in "Brain." This report confirms him in the opinion that the condition is "due to a spinal irritation or congestion, or chronic myelitis chiefly affecting the ganglion cells of the anterior horns, but extending also, when the disease is associated with glossy skin, to the ganglion cells in the posterior horns."

Hence he concludes that treatment in the early stages should be directed to the abatement of the spinal irritation by cupping or blistering the spine. This, of course, is nothing new. Dr. Latham uses two cantharides plasters, four or five inches long by two and a half wide. These are applied at bedtime, one on each side of the seventh cervical or twelfth dorsal vertebra, according as the joints of the upper or lower extremity are affected. These are left on for twenty-four hours. The surface is subsequently dressed with savine ointment for 8 or 10 days, after which healing is promoted. Medical treatment consists in the administration of liquor hydrargyri perchloridi with suitable dietary and stimulants as required. He reports good results from this treatment, in the hands of others as well as himself.

OPHTHALMOLOGY AND OTOTOLOGY

IN CHARGE OF J. T. DUNCAN.

In the *Medical Press* is a suggestive article on "Phlyctenular Affections of the Eye," by Sydney Stephenson. As Mr. Stephenson is Ophthalmic Surgeon to the Queen's Hospital for Children in London, England, his experience is very wide. He speaks particularly as to the cause of these affections.

In the first place, they are very common; although known by different names. They are spoken of as "phlyctenular," "strumous," "serofulous," or "eczematous" conjunctivitis or keratitis, as the case may be.

A prominent authority says: "Of ten cases of inflammation of the eyes in young persons, nine will be of this kind." It is by far the commonest cause of defective sight in childhood. In fact, almost all ulcers of the cornea in children over one year of age result from this disease, and consequently most corneal opacities are caused by it.

The outstanding clinical characteristic of phlyctenular mischief is that it affects almost exclusively the children of the poor.

Phlyctenular disease occurs in many different clinical forms, but the principal ones are three:

1st. There are several elevations just between the cornea and the conjunctiva, and to these nodules runs a leash of tiny blood vessels.

2nd. In a second variety the ocular conjunctiva at some distance from the cornea is occupied by one or more large phlyctenules, the form once known as "pustular ophthalmia."

3rd. In the third variety there are no nodules, but the conjunctiva, in whole or in part, is slightly elevated, and the eyeball is more or less reddened.

So far as causes are concerned, authorities are divided, some holding phlyctenular disease to be tubercular, others that it is eczematous. After exhaustive investigation, Stephenson sums up as follows:

"To sum up the substance of my remarks, I may say that, generally speaking, I regard phlyctenular disease as due remotely to the tuberculous diathesis, and immediately to an eruption of eczema upon the surface of the eyeball. Anything which tends to lower general resistance, as measles, bad hygienic surroundings, or violent wind, or local resistance, as slight inflammations of or injuries to the eyeball, may induce the disease in a predisposed subject."

Dr. Gould, in *American Medicine*, says in part:

"When pathology seriously undertakes the investigation of pathogenesis, when it leaves the end-products and the post-mortem table in order to study aberrant living functions and morbidizing habits, then will spring to view the startling fact that the mortality table is of little direct use, is only suggestive, is good chiefly for starting working hypotheses. It will at last be recognized that pathology has too long been deaf and blind to the most important of all pathogenic facts, facts repeatedly called to its attention, facts unseen yet glaringly before the eyes of every physician.

"The final object of this writing is to re-emphasize two such facts—briefly, to be sure, because, for the present times, uselessly: 1. Unphysiological function of the visual organs produces morbidity of all the functions dependant upon seeing—in varying degrees, and as a rule—and there is hardly a function of the human body or mind that is not, directly or indirectly, more or less governed by vision. Either continuously, or at some period of life, every one has pathologic vision. 2. At least 83.5 per cent. of all school-bred youth and adults have permanent and continuous pathologic function of the single support of the erect body-trunk, the spinal column—i.e., they have either functional or grossly organic lateral curvature of the vertebral column. But functional diseases do not interest the pathologist, and this, the most gross of glaring organic deformities is not seen because the living nude human body is never examined.

"The causes of a hundred kinds of 'migraine,' the causes of epilepsy, of the 'despondency' and 'ill-health' of suicides, of insanity, of much homicide and other crimes, of senility, of a myriad of unnamed diseases—these and more, are confessedly and frankly unknown and unsought by professional 'leaders,' and by official and laboratory pathology. For much or for the most part these diseases will finally be recognized as due directly or indirectly to eyestrain and backstrain. These two diseases are the only ones in modern life (and they are created by civilization itself), which demand the continuous innervation and contraction and strain of muscles and exhaustion of nerve-centres. Such an uninterrupted innervation is impossible by any device or power of the physiological mechanism; if too malignantly demanded there is certain rebellion, exhaustion and disease. To avoid these pernicious results has arisen much of the appalling vogue of militarism, 'sport,' the drunkenness of 'athleticism,' the frivolity of fashionable life, of clubdom, the

criminal wastes by luxury, and the ill-omened rest-cures, hysterias, etc., habitualized and forgotten in institutionalism, even the ludicrous scape-valves and riot of faith-cures, eddyisms, and crass faddisms beyond nausea and counting. And the end is not yet, for there is a mania of surgery: Innocent nerves are wrenched and torn out, kidneys peeled, 'decompression operations,' gastrotomies, nasal operations, etc., etc., ignorantly done, for diseases directly caused by eyestrain. Dr. Robert Morris finds abdominal surgery often unnecessary because the abdominal diseases may be cured by the capable oculist. A great medical journal advises gastrotomy in every case of obscure functional gastric disease, yet at the same time two powerful general physicians, professors of medicine too, aver that even decided gastric diseases are caused by eyestrain."

* * * * *

"But the greatest disease, the greatest begetter of diseases, *Disease Anno Domini*—Senility—during which the vast majority of the deferred years of illness gather, is, by all odds, due to eyestrain, plus its result or concomitant backstrain. When recognized, this fact will bring a revolution in the mortality tables, in human life, and in ophthalmology. For, as a rule, what is called senility is premature and unnecessary senility—an ophthalmological blunder, worked out in terms of actual illness and death."

From an excellent article by J. M. Ray (*Louisville Monthly Journal*) the following points may be noted. The article is on the "Value of Spontaneous and Induced Labyrinthine Irritation in Diagnosis."

The internal ear is made of three parts, the cochlea, the vestibule and the three semi-circular canals—taken together, they are spoken of as the labyrinth. The function of the cochlea is the perception of sound, the vestibule and the canals are concerned wholly in maintaining the body in equilibrium. The three parts of the bony labyrinth above spoken of contain the membranous labyrinth, the fluid contained in this is spoken of as the endolymph, the fluid filling up the spaces between the membranous labyrinth and the walls of the bony labyrinth is the perilymph.

The reflex influence of the organs of hearing on the motor apparatus of the eye is not a new observation. However, researches during the past few years have thrown much light on the subject and now it bids fair to become a clinical test of much importance.

The two prominent symptoms originating from this influence are vertigo and nystagmus.

Nystagmus is the term applied to any involuntary oscillatory movement of the eyeballs. We find it in two forms: First, eye nystagmus in which the velocity of movement in one direction is equal to that in the opposite direction, in other words, it consists of a series of to and fro movements equal in extent. These movements may be horizontal, vertical or rotatory. This form is found, in those with poor vision due to eye diseases, *e.g.* albinismus, etc.

Aural nystagmus differs from that due to eye defects in that the oscillations are unequal, one movement being slow, the other rapid. It has been described as consisting of two phases. A slow deviation of the eye-ball from its position followed by a rapid twitch back to the original position. The nystagmus is said to be directed toward the direction of the short, quick movement. For example, when the eye deviation is toward the left and is caught back quickly to the right, we say the nystagmus is directed toward the right.

In vertigo due to ear disease there is always associated with it the typical labyrinth nystagmus and the tendency is to fall in the direction opposite to the quick nystagmus movement. Vertigo without nystagmus is not due to irritation starting in the vestibular apparatus of the ear. Barany asserts that this observation is always true. Therefore, we are able to distinguish aural vertigo from that due to errors of refraction in the eye or any acute or chronic general disease.

Vestibular nystagmus (aural nystagmus) may be induced in three ways, viz., by rotating the patient, by syringing the ear with hot or cold water, and by galvanism. (We omit the first and third methods, and, for the sake of clearness, confine our attention to the second method, which is the most important one.) This is called caloric nystagmus. The caloric test consists in injecting hot or cold water gently into the external auditory canal from a reservoir. Politzer asserts that water of the same temperature as the body causes no vertigo and therefore no nystagmus. Barany observed if water of a temperature below that of the body was used, say about 70 degrees F., vertigo and nystagmus were produced, the nystagmus being to the opposite side. If water above the temperature of the body, say about 110 degrees F. was used, nystagmus to the same side was induced. The same laws govern the spontaneous nystagmus of labyrinthine disease. To condense we can say that hot water irrigation

and irritative lesions give nystagmus to the stimulated or diseased side, while cold water irrigations and destructive lesions in the labyrinth give nystagmus to the opposite or sound side.

We find when the labyrinth becomes involved that the nystagmus varies as follows: In cases where the canals are not destroyed but the nerve endings are irritated there is produced an intermittent spontaneous nystagmus to the diseased side, which is known as the "Fistula" symptom. In cases where the labyrinthine reaction is totally destroyed in the early stages, there will be strong nystagmus to the sound side. The patient is unable to stand up and lies in bed turned on the sound side because in this way the vertigo and nystagmus are lessened. Cases where the labyrinth has been slowly destroyed producing no irritating symptoms, none of the methods of exciting the labyrinth will produce a **reaction**.

SURGERY

IN CHARGE OF E. E. KING, G. A. BINGHAM AND
C. B. SHUTTLEWORTH.

Oehler's Symptom in Intermittent Limp

Goldflam (*Münchener medizinische Wochenschrift*) refers to a recent article by Erb on this subject, which gives credit to Oehler for the isolation of a new symptom. Many articles on intermittent claudication refer solely to the lower extremity, which is natural if not inevitable as long as the word limp or any of its synonyms is used. In quite recent years a general term dyskinesia intermittens has been made to comprehend both extremities, upper as well as lower. Oehler was apparently the first to describe this condition in the arm (1907), and should have set about to find some diagnostic symptom which would prove the identity of the disease in the two extremities. However, he did no more than mention a sudden pallor and coldness of the hands, which set in when a pavement rammer was lifted and dropped. Hence, the author thinks that Oehler's name should hardly be coupled with the symptom, because he did not extend his research. The article attracted no attention outside of Germany. Oehler even neglected to test sound objects for the presence or absence of this symptom. Parkes Weber of England (1908) noted the coldness and pallor of the feet in intermittent limp after flexion and extension at the ankle. The author, in a paper published this year, following prolonged research, was able to find the phenomenon in incipient and latent limp, but later he discovered it in healthy subjects and decided that it has an essential physiological basis. A paper by Janowski, as yet unpublished, which is made up of sphygmographic and tonometric studies, will, it is stated, demonstrate the physiological nature of this sudden pallor of the extremities during certain muscular activities.—*Medical Record*.

Meningitis and its Anticipation. (*The London Practitioner*).

In the slighter cases of fracture of the base of the skull, and some irritation from the laceration of the meninges, it is well always to bear in mind that these patients are apt to develop meningitis within 48 hours after the injury, and it ought to be anticipated. The way to do it is to clear the bowels out, and, in the second place, to put an ice-bag on the head to ensure quiet,

and, further, to insist upon absolute starvation diet. Mistakes are often made in these cases by not looking carefully after the attendants. Nurses, with the best intentions, sometimes force nourishment on such patients, but judicious starvation of a brain case is really one of the most important elements in the treatment. By starvation diet is meant milk and water, and nothing else, for the first 48 hours or so, and then, perhaps, a little bread and butter, and subsequently, very gradually and very slowly, an increase in the diet. The medical man must be guided by the temperature and the general symptoms before he lets the patient take anything really solid in the way of nutriment.—*American Medicine*.

Operation for Cerebellar Tumor

At a recent meeting of the Freie Vereinigung der Chirurgen held in Berlin, Schmieden (*Zentralbl. für Chir.*) presented a young woman, aged 24, from whom twelve months before he had removed with very good results a cerebellar cyst of the size of a hen's egg. For some few months before this operation the patient had complained of headache, visual disturbance, and paralyzes. The diagnosis and localization of a tumor in the cerebellum were based on nystagmus, ocular paresis, choked disc, lowered patellar reflexes, and especially of absence of signs of cerebellar co-ordination. The collection of symptoms indicated the presence of a tumor imbedded in the substance of the left hemisphere and pressing on the middle portion of the cerebellum. By an osteoplastic operation both hemispheres were exposed, and on exploratory puncture of the swollen and much distended cerebellum a large cyst was found on the left side. After the discharge of the fluid a portion of the wall of the cyst was cut away, and the cavity was drained. The patient, who was at once completely relieved of her troublesome symptoms, made a speedy recovery from the operation. She has, it is reported, since remained in good health, and when last seen was able to do light work. In this case, the author holds, the active progress of a very grave condition had evidently been effectually arrested by prompt intervention.—*British Medical Journal*.

Haemorrhagic Appendicitis

M. L. Bassal (*Prov. Méd.*) describes a case of appendicitis with hæmorrhages. Letulle in 1898 described a hæmorrhagic form of appendicitis characterized by intense hyperemia and a

deposit of blood in the neighbourhood of the lymphoid tissue. Later the same author stated that these appendicular hæmorrhages were only observed in cases treated surgically, and considered them to be of purely mechanical origin. In Bassal's case examination of the appendix after removal showed that hæmorrhages of two different types had occurred. In one type a diffuse infiltration of red corpuscles appeared to have invaded the follicular tissue without destroying its cohesion or general aspect; the corpuscles were distinct and stained well with eosin, and it is more than probable that these hæmorrhages were contemporaneous with the operation, and were of mechanical origin, as explained by Letulle. In the other type of hæmorrhage present the blood patches had dissociated and dislocated the follicles, and were found in the midst of the lymphoid tissue, and sometimes were placed deeply near to the muscular layer. Moreover, the red corpuscles in this type stained badly, had lost their distinctness of outline, were agglutinated in an almost homogeneous mass, and were invaded by bacteria; in fact, they presented all the signs of being of an origin anterior to the operation. The case, therefore, falls into the category of cases of true hæmorrhagic appendicitis.—*British Medical Journal*.

Early Symptoms of Tetanus

Evler (*Berliner klinische Wochenschrift*), in a serial article on tetanus, discusses first its early symptoms. He cites authorities like Rose and von Leyden. The consensus of view is that trismus must necessarily be present to insure a diagnosis of tetanus. Yet cases are on record in which trismus was absent, although tetanus of the arms, face and trunk was present. The author finds that the early symptoms of tetanus are transitory, vacillating, alternating. They comprise restlessness, timidity, night terrors, bad dreams, dysuria, dyspnœa, etc. The facial expression changes; there may be nosebleed, night sweats, prostration, yawning, vertigo—all symptoms of nervous irritability or prostration. Of more value are certain surgical symptoms. Thus swelling of an extremity, despite high elevation, is suspicious. The member in question may also be hot and painful. Lymphangitis commonly coexists. The blood-pressure is higher on the affected side. The injured limb shows such phenomena as contracture and tremor. Certain muscle groups are in a state of tonic spasm, often latent; that is, spasm appears only upon exertion.—*Medical Record*.

Editorials

DR. LOUIS WICKHAM AND RADIUM

The profession on this continent are at present enjoying the privilege of hearing Dr. Louis Wickham, Director of the Biological Laboratories for Radium in Paris. At the recent meeting of the British Medical Association, Dr. Wickham made a great impression on those who had the opportunity of hearing him, by the very modest way in which he presented the results obtained by him during his work with radium for the past five years. It has been established without a doubt that on superficial epitheliomata, cheloids and angiomas radium has a selective action, but from his recent work Dr. Wickham thinks that radium therapy is only on the threshold of immense possibilities. By a proper and judicious combination of surgery and radium treatment an enormous field is opened up in the treatment of malignant diseases of the uterus, stomach, bladder, rectum, etc. He has, as a matter of fact, obtained results which, by many others, would be pronounced as cures, but which he, with his characteristic scientific conservatism, is in no hurry to have established as certainties. He presents his results, claiming nothing for them, and is not to be classed with others who have acclaimed radium as a "cure-all."

Dr. Wickham presented a paper before the Medico-Chirurgical Society, of Montreal, on September 27th and before the Academy of Medicine, Toronto, on September 30th. He will have reason to be gratified with the reception he received at both places.

Elsewhere in this number will be found an abstract of his address as delivered in Toronto. It will well repay a very careful perusal and study.

RESIGNATION OF DR. SHEARD

Dr. Sheard's eminent fitness for the position of Medical Health Officer was generally, if not universally, acknowledged.

It was a surprise to many that a man of his ability, with independent means, should have worked so faithfully for many long years in the interests of public health in Toronto with such an absurdly inadequate remuneration. He has given the strenuous work of the best years of his life to the city of Toronto. We do not quite understand why he sent in his second resignation, but rumor says that he was annoyed at the gross ingratitude of the people whose welfare he had at heart.

We must acknowledge, of course, without any undue scrutiny of Dr. Sheard's private reasons for sending in his resignation, that his work was not properly appreciated by certain individuals. It happens, however, that since the creation of this world no individual has ever existed who pleased everybody. Apart from this truism, we desire to say a word or two with reference to Dr. Sheard's work in this city.

We believe we are representing the views of a large majority of the laity and profession in the city of Toronto, and the Province of Ontario, when we say that Dr. Sheard for many long years was the most capable Health Officer in North America. The city of Toronto owes Dr. Sheard a debt which it can never pay, and a debt which is much bigger than the ordinary man on the street, who knows not the great difficulties he had to contend with, can ever by any possible chance fully appreciate.

THE NEW MEDICAL HEALTH OFFICER OF TORONTO

Dr. Chas. O. Hastings was appointed Medical Health Officer of Toronto at a meeting of the City Council held October 9th.

The final vote was as follows: Yeas—Controllers Ward, Church, Foster; Aldermen Graham, McBride, Weston, McCarthy, Rowland, May, Spence, Heyd, Hambly, Phelan, McCausland, Maguire, O'Neill—16. Nays—The Mayor, Controller Spence; Aldermen Dunn, Hilton, Baird, Chisholm—7.

The majority was, of course, large, but the most satisfactory feature connected with the vote was the fact that all or nearly all of the seven who voted nay will cordially support the new officer

in his difficult work of looking after the health of the city of Toronto.

Three names were prominently mentioned for the position. Dr. Hill, a graduate of the Toronto University, who has done excellent work in different cities of the United States in connection with health matters during the last sixteen years, was highly recommended by Dr. Amyot and several other prominent physicians of the city. He also received the support of Controller Spence and several aldermen. He is known by a large number of the physicians in Toronto, and is generally recognized as a man of high character and great ability.

Dr. Goodchild, after graduating from Queen's University in 1899, took a special course in sanitary science in Edinburgh, and became B.Sc. Public Health, Edin., in 1902. After leaving Edinburgh he went to London, and after a long course of study passed the examination for the "double qualification" in 1904. He has practised for nearly six years in Toronto, and is very highly respected by all who know him.

Dr. Hastings graduated from Victoria University in 1885, and thereafter did post-graduate work in London and Dublin. He became a licentiate of Queen's and the Royal College of Physicians of Ireland in 1887. During his residence of 23 years in Toronto he has established a high reputation as a physician, and has obtained to a wonderful extent the respect and goodwill of his confreres. He has also paid much attention to questions pertaining to public health, such as the inspection of school children and the conditions in the slums of large cities. His best work was done as Chairman of the Milk Commission of the Canadian Medical Association, a work which was greatly admired by physicians in all parts of Canada and many parts of the United States. The majority of the physicians of Toronto believe that, all things considered, he was the best man in sight for this important position and expressed a very positive opinion to that effect to the Council. He also received a very kindly and strong endorsement from nearly all the newspapers of Toronto.

We offer our warmest congratulations to Dr. Hastings and our best wishes for his success.

THE NEW GENERAL HOSPITAL

In the report of the Fourth Annual Meeting of the Canadian Hospital Association, held in Montreal Sept. 28th and 29th, we find a description by Dr. J. N. E. Brown of the plans of the new General Hospital to be built in Toronto. The area of the block of land to be built on is about 9 acres. The following buildings will face College Street: the Administration Building being in the centre, the Surgical Building east and the Medical Building west of the Administration Building. Facing University Avenue we have from north to south the Emergency Hospital, the Out-Patients' Department and the Pathological Building, and to the south the building for private patients, nurses' home, power house, laundry and Ambulance Building; and facing the east we have the building for obstetrics and the servants' building.

The front of the ground floor of the Administration Building is taken up with the executive offices. Two short wings to its rear are occupied by what are called semi-public patients (36 in number). These are patients who receive ordinary public ward attention, but who may be cared for by their own family physician, a special provision being made for the supervision of cases requiring operation. The next flat above is devoted to the eye, ear, nose and throat patients (36 beds). The next flat above to gynæcological patients (39 beds), and the flat above this to internes' quarters.

The Surgical L, the "Timothy Eaton Pavilion," is three storeys high—to be built on the unit system. By this method of construction a surgeon may have complete autonomy on the flat to which he is assigned. It is intended that the male patients shall be received in the long arm of the L, the one running southward; and the female patients will be received in the short arm of the L, the one running eastward. The three flats will accommodate 145 surgical patients.

Each L-shaped flat of the Medical Building is given to a physician in charge, who, with his staff of assistants, his interne and his head nurse, will look after the patients, male and female, assigned to this particular flat. Fifty patients may be accommodated on each flat.

The Outdoor Department, the Cawthra Mulock Building, provides for the accommodation of from three to four hundred out-patients a day, the surgical and gynæcological patients being received on the ground floor, the medical, the eye, the ear, nose and throat patients being received in the upper storey.

The Emergency Hospital provides for the accommodation (bed) of nine patients.

The Private Pavilion will accommodate 98 patients and have a separate kitchen and operating rooms. This will receive cases in gynæcology, medicine, surgery, eye, ear, nose and throat, obstetrics, etc. This will be run as a separate business proposition from the public ward building, any surplus on running expenses being applied to the maintenance of the public ward hospital.

The Nurses' Home will accommodate 174 nurses. The Lying-In Building, called the Burnside, will accommodate 36 public ward patients.

The complete cost of land, buildings and equipment is estimated at two and a half million dollars.

RECENT ASYLUM APPOINTMENTS

In our last issue we referred to the appointment of Mr. Downey as Superintendent of the Hospital for the Feeble Minded in Orillia and the promise of the Provincial Secretary, Mr. Hanna, to appoint a medical director and suitable assistant, who should devote themselves exclusively to the medical side of the work.

We were at that time much interested and somewhat curious as to the sort of men who would be selected. We had in our minds the wretched time-honored custom of appointing men to positions in asylums for services rendered in elections. While it will be generally acknowledged that most of such appointments were good, even from a medical standpoint, it was generally felt that an injustice was being done to those men in the

service who had done admirable work in the various asylums for many years.

We notice, however, that in recent appointments "politics played no part," as a certain Toronto newspaper expressed it. Dr. Herriman, who has been one of Dr. Clarke's assistants in the Toronto Asylum for some time, has been made Medical Director of the Orillia institution. Dr. G. A. McCallum, the Superintendent of the Penetanguishene institution, has resigned, and Dr. Wilson, the Superintendent of the Cobourg institution, takes his place. Dr. Moher, of the Brockville institution, has been transferred to Cobourg. Dr. Forster, who has been for many years in the service, and is the oldest of the assistant superintendents, has been promoted to the position of Medical Superintendent at Brockville. Dr. Clair has been transferred from the Mimico institution to take Dr. Herriman's position in Toronto. Dr. Rollins will be the new Assistant Superintendent at Mimico.

These appointments will be generally approved by the profession, and the promotions of Drs. Forster and Herriman are highly satisfactory to those who know well how faithfully these men have worked in the asylum service.

THE CITY COUNCIL AND THE MEDICAL PROFESSION

The Board of Control and the City Council, in their recent discussions over the appointment of a Medical Health Officer, showed an amount of consideration and respect for the opinions of the members of our profession which should be satisfactory to the physicians of Toronto. We have only one regret in that regard. The majority of the physicians in Toronto indicated clearly after the second resignation of Dr. Sheard that Dr. John Amyot was the man best qualified to succeed him. The reasons for not appointing him were unsatisfactory. Apart from that their attitude when discussing the qualifications of the other three excellent men available was all that could be desired.

The Council treated the profession of Canada very kindly

when they gave the sum of \$500 to assist in entertaining outsiders at the meeting of the Canadian Medical Association last June. Controller Ward, the acting Mayor at the time, attended the opening meeting and delivered a very pleasing address of welcome. Alderman Maguire, the Chairman of the Reception Committee, said to a number of physicians at that time, "Why don't you doctors come to us frequently and tell us what you want. We respect you for the great work you are doing, and we want your advice and help on many matters that come before us." This same alderman supported the candidature of Dr. Goodchild for a time, but when he heard that Dr. Hastings was the choice of the majority of the profession of Toronto he took pains to investigate and consulted a large number of physicians. When he learned the facts he changed his attitude and explained his reasons therefor very frankly and in a manly way at the open meeting of the Council. Mayor Geary made certain observations about medical men signing requisitions without proper consideration, which were unjust, but he was conscientiously supporting a good man, Dr. Goodchild. After the final decision was reached he did a very graceful act in writing the kindest sort of a letter to Dr. Hastings, assuring him that he would support him in all his efforts for the Department of Health conditions in Toronto.

MEDICAL EDUCATION IN VIENNA

It falls to the lot of a medical man only a few times in his life to visit the great centres of post-graduate study, and when these opportunities come he wants to know where it is best for him to go, so that he may spend the few weeks or, happily, months to the most advantage. For many generations there has been a large exodus to Vienna, and from some recent figures at hand it would seem that the capital of the Austrian Empire is still as popular as ever among American physicians.

The hospital facilities of Vienna are surpassed nowhere in the world. Not only do patients come from the city itself (with its population of nearly two millions) and the immediate neighborhood, but it is no uncommon sight to see a child, perhaps,

brought from as far as Russia, so great is the fame of the hospital in Eastern Europe. In fact, the number of patients applying for admission is so great that each bed contains for the most part only a case that is either acutely ill or is of great interest. When the new hospital is completed the building will be one of the finest in the world.

Perhaps in no other centre does one find such a galaxy of famous men, who are nearly all willing to do post-graduate teaching. The courses in all branches are usually so varied and so abundant that one has no trouble in filling up a time-table which will keep one busy from 7.30 a.m., when the lectures begin, till 10 at night. But the fees are high. The average for a general course would be perhaps \$100 a month; in a special course, with operations, a good deal more. The classes, however, are small, and there is usually the feeling that you have got your money's worth.

A doctor whose knowledge of German is very rudimentary would be pleased to hear that the language problem is not insurmountable. There are many men who go there and get good courses who do not understand a word of German. Most of the instructors can lecture in English, some of it so good that it would make even a Canadian proud if he could speak as well. Those who know German, however, have an advantage, for they can attend whatever lectures they desire. But a very few words and phrases will carry one a long way.

Vienna is a very beautiful city in many ways and has some fine art galleries. Then the outlying villages are all intensely interesting and easily reached by short excursions. Although the cost of living is rather high (\$10 to \$15 a week in a pension), the food is good, and the Viennese make a specialty of catering to the American physician. If, however, one desires to live as the Austrians do, he can get along very cheaply, although the landlords are proverbial for their sharpness in driving a bargain and in "doing the American."

The consensus of opinion among medical men who have worshipped at the shrine of Æsculapius in many places is that Vienna cannot be surpassed as a place to give both quality and quantity of work to a physician who has only a short time at his disposal.

F. A. C.

Personals

Dr. Fred Grasett returned from England early in October.

Dr. W. B. Sproule has passed in Medicine for the conjoined qualification.

Dr. Oswald Dinnick passed his primary for the Fellowship of the Royal College of Surgeons, England, October 20th.

Dr. J. Price-Brown, of Toronto, removed to his new offices, College Street, October 1st. His telephone number is North 4040.

Dr. E. A. McCulloch, formerly of College Street, Toronto, wishes to announce to the profession and his friends that he has returned from a year's residence at the Adirondack Sanitarium and Saranac Lake and resumed practice at 141 Farnham Ave., paying special attention to the diagnosis and treatment of laryngeal and pulmonary tuberculosis.

Dr. George G. Nasmith has been appointed director of the laboratory of the Health Office in Toronto. He graduated B.A. from the University in 1900, and became Doctor of Philosophy in 1903. He has an intimate knowledge of chemistry and bacteriology. He has been the chief assistant of Dr. John Amyot in the laboratory of the Provincial Board of Health for about eight years. His appointment in the Toronto Health Department is considered eminently satisfactory.

Obituary.

WM. CANNIFF, M.D., M.R.C.S. (ENG.)

Dr. Canniff was one of the best known surgeons in Canada during what may be considered the last generation. He was born near Belleville a little over eighty years ago. He received a part of his medical education in New York. He was graduated M.D. from the University of New York in 1854. He also graduated M.D. from Victoria University in 1859. He was one of the founders of the Canadian Medical Association, and was President of that body at the Halifax meeting twenty-five years ago. He took a great interest in medical education, and was for some years Professor of Surgery in the Medical Faculty of Victoria College. For more than twenty years he suffered from ill health, and lived quietly near Gravenhurst, Muskoka. About two years ago he went to Belleville and remained there until the time of his death, which occurred October 18th.

Mr. G. Walley Clarke completed his third year in medicine in Toronto University last spring. After the close of the session he went to Nelson, B.C., where he had many friends. He was to have returned to Toronto about October 1st, but a few days after that his friends learned with sorrow that he died of typhoid fever after a short illness.

DANIEL ARCHIBALD SINCLAIR, M.A., M.B.

We have to report with very deep regret the death of Dr. D. A. Sinclair, one of the brightest of our young Canadian physicians. Dr. Sinclair received his general and medical education in the University of Toronto and graduated M.A. in 1900, and M.B. in 1903. He was a son of Dr. D. A. Sinclair, 315 Spadina Avenue, Toronto. When the father removed from Melbourne, Ont., his son succeeded him in practice in that town. His success was marked, and he soon gained the respect and esteem of both his patients and the general public in that vicinity. On account of ill health he was forced to give up his practice and endeavor to recover his health in another climate. As a consequence he went to California last November. His health appeared to improve for a time, and his friends hoped for his recovery. Unfortunately such hopes were vain, and his many friends were sorely distressed by hearing that he had died at Pasadena, Cal., October 1st, 1910.

Book Reviews.

Anatomy, Descriptive and Applied. By HENRY GRAY, F.R.S., Fellow of the Royal College of Surgeons; Lecturer on Anatomy at St. George's Hospital Medical School, London. Eighteenth edition, thoroughly revised and re-edited, with additions by Edward Anthony Spitzka, M.D., Professor of General Anatomy in the Jefferson Medical College, Philadelphia. Illustrated with 1,208 engravings. Philadelphia and New York: Lea & Febiger. 1910.

Medical literature, from its nature, numbers very few books which can be regarded as classics. Of those we have, Gray's Anatomy stands first. Since its first appearance it has been the authority on the subject of anatomy and has been the means of introducing thousands of medical students to the mysteries of this art.

The present eighteenth edition has been thoroughly revised. The former sections on "Surgical Anatomy" are now called by the more comprehensive term "Applied Anatomy." A happy medium has been maintained between the old and new terminology. The illustrations are splendid and could not be surpassed. Both the editor and the publishers are to be congratulated on this new edition of an old friend which they have given to the profession.

A Practical Guide to the Newer Remedies. By J. M. FORTESCUE-BRICKDALE, M.A., M.D., Oxon.; Physician to Clifton College; Assistant Physician to the Bristol Royal Infirmary; Lecturer on Pharmacology in the University of Oxford, and Clinical Lecturer in the University of Bristol; Joint Author of "The Chemical Basis of Pharmacology." Bristol: John Wright & Sons, Ltd. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. 1910.

Every day the medical journal or the manufacturing chemist brings to our notice some new drug-stuffs. As a rule these are the products of synthetic chemistry, and it is a confession we must make that many of them are used with very little knowledge on our part of their real composition or physiological action. Many of them are very useful, and their value has been proved by clinical experience. In this small book the composition of many of these compounds is made clear to us and their therapeutic value discussed. Thus we can pick the good from the bad. When so many of these instances are being encountered every day this is a book which all can be recommended to read.

Diagnostic Therapeutics. A guide for practitioners in diagnosis by aid of drugs and methods other than drug-giving. By ALBERT ABRAMS, A.M., M.D. (Heidelberg), Consulting Physician to the Mount Zion Hospital and the French Hospital, San Francisco; formerly Professor of Pathology and Director of the Medical Clinic, Cooper Medical College (Medical Department of Leland Stanford Junior University). *Naturam morborum curationes ostendunt.* With 198 illustrations. New York: Rebman Company, 1123 Broadway.

A vast amount of knowledge has been incorporated into this book, and it indicates a wide acquaintance with medical literature, past and present, on the part of the author. The only criticism we would like to make is that the title to us appears misleading. The book might well be divided into two volumes, one on therapeutics, the other on methods of diagnosis. In describing the action of drugs, various phenomena following their use are in many cases shown to be of diagnostic importance, and this part of the work apparently gives the title to the whole. The rest is taken up with very careful and complete descriptions of other therapeutic procedures, while more than half of the book deals in a very clear and well-written manner with diagnostic methods. Good explanations are given of the various phenomena encountered, and in point of style and lucidity this section is excellent. All who read it can be sure of finding something new, as it departs in many ways from the stereotyped text-book.

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Selections.

Pathogenesis of the Diarrhoea of Basedow's Disease

Balint and Molnar (*Berliner klinische Wochenschrift*) state that this subject has received little attention until in recent years. Our increasing knowledge of internal secretions is responsible for the newly awakened interest. It has been assumed that the diarrhoea may be in some way associated with pancreatic insufficiency. The research instituted by the authors is best shown in the relation of a single case, as follows: Woman, 27; for past three years exophthalmic goiter. Patient pregnant when disease supervened. Desire for food and drink had been one of the principal symptoms, accompanied by diarrhoea. Despite intake of water and food, patient became emaciated. Excess of perspiration was also present. When first examined the patient presented the same syndrome as was shown in the history. The symptoms in any case of Basedow's disease are sufficiently numerous; so that the relation of the case must consist chiefly of the gastroenteric symptoms. The patient, who ate and drank freely, had from four to eight movements daily, either semisolid or fluid. There was considerable fat present, but it was intimately mixed with other stool content. In other words, so-called butter stools were absent. The function of the pancreas was now tested by giving a Boldyreff-Volhard oil breakfast and analyzing ordinary fæces as to the presence of trypsin and diastase. The results appeared to show that there was no inactivity in the external secretion of the pancreas. There remains for consideration the recently made claim of Falta that the diarrhoea of Basedow's disease is due to insufficiency of the pancreatic internal secretion. The authors know too little as to Falta's data to criticize this opinion; but in their own case there was neither diabetes nor experimental alimentary glycosuria.—*Medical Record*.

Bacterium Coli Commune as Pathogenic Germ and Saprophyte

Fejes, of Prof. Jendrassik's clinic in Budapesth (*Deutsche Med. Woch.*), comes to the conclusion, after a study of several cases, that the *B. coli commune* may behave purely as a saprophyte in causing an absorption fever without further pathogenic changes. Naturally so radical a conception requires continuous clinical corroboration. Each typhoid convalescent must be tested as to fæcal and urinary constituents. The views of the author are best illustrated by his cases, one of which was as follows: Healthy girl, aged 18, was taken with a severe cold and

sore throat, two or three weeks before consultation. From this condition she made a complete recovery. Three days before consultation she was seized suddenly with abdominal pain, chills, fever, constipation, vomiting and hiccough. Diagnosis: Cholangitis, enlarged liver, right-sided pleurisy. The patient made a good recovery. In order to understand the nature of the condition a bacterioscopic examination was absolutely necessary. The bacillus coli commune was readily cultivated from the blood and found to be highly virulent. The same micro-organism was also present in the pleuritic exudate. The author assumes that the B. coli first caused the angina. It was not only swallowed, but also reached the blood. The swallowed germs caused the cholangitis, while those which reached the blood were responsible for the febrile attack. The pleurisy, doubtless, resulted from infection of the germs through the diaphragm. Other cases show a similar mechanism. Such cases of colisepsis bear little analogy with typhoid, but the author believes that such sepsis is often grafted upon typhoid fever, the germs reaching the blood through the intestinal ulcers. Despite the presence of the bacilli in the blood, close observation leaves doubts as to its pathogenicity, i.e., as far as its power to cause metastases is concerned. Instead of colisepsis, colitoxemia might be a more acceptable term. In other words, the lesions of the tonsil, gall ducts and pleura were due to local attack, while the blood state was merely a toxemia.—*Medical Record*.

Ileocolitis and Acidosis

T. D. Parke (*J. A. M. A.*) calls attention to this distinctly marked symptom-complex. The symptoms are described as follows: After from one to four days of looseness of the bowels caused by mild ileocolitis, labored breathing develops, often suddenly, followed by prostration, restlessness, obstipation and enlargement of the liver. The temperature is sometimes subnormal. In other cases it stands about 100° F., and in a few patients runs higher. Vomiting with an acetone odor of breath occurs in a good proportion of cases. The urine is limpid and free. Albumin is sometimes found. Urine from three patients was submitted to chemical examination, and in each the report was that ammonia nitrogen was high. Jaundice has always been absent. During the labored breathing the breath feels cold to the hand held in front of the nostrils. This has been interpreted, rightly or wrongly, to mean volatile substances thrown out in the expired air. In fatal cases death seems to come from exhaustion, from forty-eight to seventy hours after the onset of the labored

breathing. In cases of recovery the duration of labored breathing was about the same. Convulsions were not observed and coma not until a few hours before death. The mortality, in a series of thirty-two cases observed, was 71 per cent. In nine cases autopsies were made and the findings were negative as regards gross appearances, except injection of the mucosa of the intestine in some cases and acute yellowish areas on the surface of the liver, extending downwards to various depths in the substance. The gall-bladder has in all cases been distended with dark, green, ropy bile. Microscopic examination has only shown fatty degeneration of the liver. Treatment has varied from eliminative to symptomatic, with the employment of strychnine in good doses, epinephrin, and hypodermoclysis of normal salt solution. Treatment is of little avail when sufficient injury has been done to the system, but when this is not the case hypodermoclysis is of value.—*Medical Record*.

Acute Coryza

When it is desired to arrest a cold in the head in its evolution, it may be treated three or four times a day with inhalations of the vapour of boiling oxygen water. Where there is much running of the nose, it can be checked by the administration of a quarter of a milligramme (1-250) of atropine, morning and evening.

As abortive treatment, it has been advised to sniff the juice of a lemon, or to inhale a few drops of chloroform and menthol (1-20).

Prof. Hayen recommends the following mixture:

Phenic acid, 1 dr.
Liq. ammonia, 1 dr.
Proof spirit, 2 dr.
Water, 3 dr.

A few drops on blotting paper and inhaled.

The following powder may be snuffed:

Cocain, 6 grs.
Menthol, 10 grs.
Ground coffee, 20 grs.
Boric acid, 3 drs.

Or this:

Menthol, 10 grs.
Salol, 40 grs.
Boric acid, 2 drs.

Adrenaline is now much employed; two drops of a solution

of 1 in 2,000, applied with a brush, gives immediate relief.

Or:

Sol. of adrenaline (1 to 1,000), 10 drops.

Sol. of cocaine (1 to 100), 5 drs.

Cherry laurel water, 5 drs.

Sniff up a few drops three or four times a day.

A spray of a mixture of menthol (15 grs.) and vaseline oil (1 oz.) is agreeable and useful.

Where inflammation of the lip and the edges of the nose is present:

Cocaine, 10 grs.

Tannin, 1 dr.

Cold cream, 5 drs.

—*The Medical Press.*

Surgical Treatment of Exophthalmic Goiter

Porter (*ibid.*) agrees with other surgeons that surgery, in properly selected cases, offers more and quicker improvements than medical treatment. To be successful, earlier operation must become the rule before incurable degenerations have developed. When reasonable medical treatment has been carried out the surgeon should be consulted. While from the very nature of the disease permanent cures may not be common, permanent improvements follow timely and appropriate operation in the large majority of cases after medical treatment has proved unavailing.—*J. A. M. A.*

Miscellaneous.

The Illy-Nurtured Baby

In the course of daily practice the physician is frequently called upon for advice as to the management and treatment of the child that fails to thrive. Many such babies, while not marantic, and while apparently happy and healthy in other respects, seem to remain "in statu quo," without evidencing the normal growth and gain in size and weight. Very naturally, the first thing to be investigated is the character of the child's food, the frequency of feeding, etc., and attention to the food factor is imperative, if improvement is to be expected. In addition to this, however, the little patient often requires some "fillip" to vitality, in the form of a mild general tonic and reconstructive. For this purpose nothing is more generally beneficial than Pepto-Mangan (Gude), in doses proportionate to age. Being palatable, even young children take it readily. As it is free from irritant properties, it is readily tolerable and absorbable, without disturbing the digestion or producing constipation.

High-Frequency and Thermo-Penetration in the Four-Cell Bath. Dr. Schnee's System

The lecturer gives a summary, based on the latest scientific experience and research, with regard to the production and therapeutical employment of high-frequency and thermo-penetration. His researches have proved that both kinds of current are suitable for general as well as local application in the four-cell bath, whereby their action has been found to be much more evident and successful.

Further publications on this subject are to appear. At the conclusion the lecturer requested those present to also undertake trials in the described manner.

A New Massage Method

The lecturer at first referred to the recent articles on the subject in Nos. 30 and 31 of the *Medizinischen Klinik*, and again cursorily described his new massage apparatus, which, for the greater part, is capable of replacing the manual massage practiced up to the present, and which, with only a third part of the

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Original Communications

THE BORDERLAND OF MEDICINE AND SURGERY IN DISEASES OF THE KIDNEYS, WITH SPECIAL REFERENCE TO LITHIASIS, TUBERCU- LOSIS AND TUMORS*

BY H. B. ANDERSON, M.D., L.R.C.P. (LOND.), M.R.C.S. (ENG.),

Associate Professor of Clinical Medicine, University of Toronto.

In the management of renal diseases, as with those of other organs, there are some which by common consent and practice fall to the physician, others to the surgeon, while in the case of many the best results are to be obtained only by the co-operation of both, the work of one in diagnosis and treatment being complementary to that of the other. Belonging to the province of the physician may be mentioned the various forms of Bright's disease. This may be granted notwithstanding the enthusiasm with which many a few years ago regarded Reginald Harrison's capsule-splitting operation in conditions of renal tension and Edebohl's more questionable operation of decapsulization in cases of subchronic and chronic nephritis. Although at that time these procedures appeared to some to indicate another successful invasion by the surgeon of the special domain of the internist, it is now generally conceded that the early hopes entertained of the value of these operations have not been realized, and that except in a very limited field, little reliance is to be placed on their efficacy. While in medicine we must always be prepared to re-adjust our opinions to accord with newly discovered facts, it was difficult for the physician and pathologist to understand the *rationale* of decapsulization for the relief of a systemic condition

*Read before the Medical Section of the Academy of Medicine, Toronto, March, 1910. The Surgical Aspect was presented by Dr. S. Cummings.

wherein the ultimate result depends more on the *cardiac* than the *renal* involvement.

In tumors, on the other hand, *when once the diagnosis is made*, the case belongs to the surgeon—the physician's only role being to assist in the palliative treatment of inoperable cases. I have said *when once the diagnosis is made* advisedly, because tumors are seldom recognized as such at first, the patient's attention being usually early directed to the *pain* or *hæmaturia* for which he applies to the physician for relief. The latter must therefore be prepared to appreciate the significance of these symptoms, and if unable to arrive at a diagnosis, to avail himself of the assistance of X-ray examination, cystoscopy, ureteral catheterization, ureteral meatoscopy, etc. Even in cases where surgical technique is necessary for diagnosis and where surgical operation offers the only hope for eradication of the disease this preliminary investigation by the physician should not be undervalued, as the results obtained will depend not only on the local lesion, but are often determined by the general condition of the patient, such as the state of the heart, the arteries, the blood, and the renal capacity—factors which the physician's training enables him to more accurately appreciate in their bearing on the particular case. This, it appears to me, is too often lost sight of, to the detriment of the patient.

In tuberculosis the delimitation of territory is still debated though at the present time the trend of opinion is unquestionably in favor of nephrectomy as soon as a diagnosis is made unless precluded by widespread dissemination of the disease or involvement of the other kidney. It is a curious fact that in this disease surgeons often take the more conservative view, while physicians are among the strongest advocates of radical measures. *A priori* one might naturally have looked for better results from general methods, tuberculin, etc., in the management of renal tuberculosis, but both clinical and pathological evidence go to prove that complete eradication apart from nephrectomy is so uncommon and the ultimate results are usually so bad, that one is not justified in counselling reliance upon medical treatment alone. The earlier the condition is recognized and the more localized the lesion the more strictly surgical must the case be considered. Contrary to the teaching of former times more recent investigation in which cystoscopy and ureteral catheterization have been of the greatest value, has shown that *hæmatogeneous infection of one kidney* is the *usual primary condition*, and that the ureters and bladder are secondarily involved. The other kidney in time is likely to be implicated or more general dissemination

occur. These considerations are worthy of the most serious consideration in determining our procedure in a given case. While experience has shown that involvement of the ureter and bladder does not preclude the possibility of successful surgical treatment, yet obviously it renders the outcome more uncertain. Involvement of the other kidney however is a contraindication to operation. While extensive dissemination of the disease to other parts or even a localized lesion in one lung, is generally considered as a contraindication to operation, it would be interesting to know the effect in a limited and improving pulmonary lesion of the removal of an advanced tubercular kidney. In a case of this sort recently under my observation the advanced renal involvement so absolutely precluded the possibility of recovery that, balancing the danger of shortening the patient's life in the faint hope of success against the otherwise inevitably fatal issue in a few months, I was prepared to suggest operation. The case was referred to Dr. Trudeau for opinion which was emphatically against any surgical interference. Though the pulmonary condition showed evidence of continued improvement the patient died in six months. Trudeau was probably right still one cannot help but wonder if the one hope of relief, though a forlorn one, was given the patient.

That marked improvement and even apparent cure occurs under medical treatment is quite true. In the case just referred to the clinical history showed conclusively that a serious illness four years previously was the beginning of the trouble. The patient's general health had been completely restored (with the exception of a symptomless pyuria), and under the physician's advice she was allowed to marry, the quiescent renal disease again showing evidence of activity before the birth of her first baby. Had nephrectomy been done during this quiescent period complete eradication of the disease might reasonably have been hoped for.

In the case of a young girl referred to me by Dr. Hazelwood of Bowmanville with a history dating back some five years, under medical treatment she gained 15 lbs. in weight and her general health was quite restored. Owing to the persistence of slight pyuria and attacks of severe pain however nephrectomy was done by Dr. McKeown with a most satisfactory result. The kidney was only slightly enlarged but showed not only old fibro-caseous lesions but more recent small caseous foci and miliary dissemination. The excellent condition of the patient's general health did not prepare one to look for such extensive, active renal mischief.

While tuberculous disease of these organs can be diagnosed in a general way by ordinary medical procedure and bacteriological examination, yet as this falls short of a complete diagnosis in not being able definitely to locate the seat of the lesion and in determining the condition of the ureter, bladder, and especially of the other kidney, operative interference is not warranted without the more definite information to be obtained only by cystoscopy, meatoscopy and ureteral catheterization.

In urinary lithiasis as with tuberculosis, the patient usually first consults a physician, upon whom therefore falls the responsibility of recognizing the character of the case. Careful attention to the history of the case and the attendant symptoms, combined with urinalysis, usually suffices for this purpose. The subsequent management whether medical or surgical has to be determined in each case. In renal or ureteral lithiasis where the pain, attacks of colic, hæmaturia and pyuria are not marked or occur only at long intervals, and there is no evidence of blocking of the ureter and damming back of the urine with subsequent infective pyelitis or pyelonephritis tending to destroy the organ, then medical treatment should be given a fair trial. Every physician knows that under proper dietary, alkalies, urotropine, turpentine, mineral waters, saline catharsis, etc., complete relief may be obtained in many cases. Some authorities speak highly of the value of glycerine in doses of 50 to 100 c.c., which is said not infrequently to produce painful crises, with expulsion of the calculus. That ureteral calculus may be expelled after months of impaction was shown in a case referred to me by Dr. H. R. Frank of Brantford last December. The patient had been suffering for some time from frequently recurring attacks of severe colic, hæmaturia, pyuria, cylindruria, etc. Calculus was diagnosed but its seat could not be located. Dr. Cummings by an X-ray examination and ureteral catheterization, demonstrated the calculus in the lower end of the ureter. The patient returned home, had several recurrences of the colic, one of which occurred about a month ago when he was on the street. There was urgent desire to urinate, and during this act the calculus was expelled and the patient completely relieved of all his symptoms. In ureteral calculus injection of oil into the ureter is sometimes followed by extrusion of the calculus. There are many cases however especially those in which *painless hæmaturia* is the only symptom, where in the early stages it may be impossible for the physician to determine whether the case is one of calculus, tumor, interstitial nephritis, ruptured varicose veins, or other cause of this phenomenon. The difficulties presented and the fallacies of our

usual clinical signs will be discussed more fully later. In these cases the early diagnosis is so essential to rational treatment that X-ray examination, cystoscopy, meatoscopy and ureteral catheterization should be resorted to at once. It is scarcely necessary to say that in every case where operative treatment is deemed advisable that the exact location of the stone and the condition of the other kidney should first be determined by these means. In bilateral ureteral calculus and in calculus anuria operation is always indicated. It is perhaps unnecessary to call attention to the frequent occurrence of ureteral calculus. I have had six cases diagnosed as such during the past year, and in three of them the exact seat of the calculus was determined by X-ray examination. In two of these Dr. Cummings operated and removed the calculus, and the patients are now well. In another the calculus, as before stated, has extruded spontaneously. As a rule it is impossible to distinguish with certainty a renal calculus from one in the ureter by medical examination alone. At times a calculus impacted in the lower end of the ureter may produce purely vesical symptoms. Rectal or vaginal palpation of the ureters may be of value in some instances, but cases are reported where enlarged glands along the ureters have led to erroneous conclusions. In two cases of mine with calculus impacted in the lower end of the ureter the patients complained of a peculiar paræsthesia and numbness extending down the outer side of the thigh. I have not seen this symptom mentioned elsewhere and whether it has any localizing value or not one is not warranted in saying.

Speaking generally, it may be said that the elaboration of the surgical technique of cystoscopy, ureteral meatoscopy, ureteral catheterization and X-ray examinations during the past dozen years in urinary diseases, constitutes one of the most brilliant developments in practical medicine of any period. They have elucidated the pathology and have given certainty and precision to diagnosis in conditions previously obscure or only guessed at and have made possible the successful treatment of many cases formerly beyond our help. At the same time these methods are not to be considered exclusive of, but rather as supplementary to the medical investigation of the case. As before stated, in many cases the medical examination is sufficient for a diagnosis which enables the physician to direct the treatment of the patient. The more precise methods of local diagnosis possessed by the surgeon are required in every doubtful case or whenever operation is contemplated. The following reasons may be adduced against their employment as routine measures in every case:

1. They are not always necessary in order to arrive at a sufficiently accurate working diagnosis.

2. Patients frequently object, on account of the discomfort and expense involved until simpler procedures have been fairly tried.

3. The technique is difficult requiring not only manipulative skill of a high degree, but much experience in interpretation of results.

4. The discomfort and not infrequently dangers attendant in these examinations must be borne in mind. These are often discounted by the surgeon, and with skilful operators are no doubt greatly minimized, yet cystitis, pyelonephritis or other trauma not infrequently result. These dangers, however, are of secondary importance in cases where the diagnosis cannot otherwise be made.

Segregation of the urine is advocated by some as simpler in technique and less liable to do harm. It is certainly of value in some cases but neither in accuracy nor in completeness of the information furnished can it be compared with the measures before mentioned.

Just here may I refer to the value of the tests that have been recommended in recent years for estimating renal permeability or as an index to renal sufficiency. One need not refer to the technique as this is well known. The methylene blue test is open to the same objection which applies to the estimation of urea as an index to the excretory capacity of the kidneys. The inference is not warranted that because the organs can excrete one substance normally that they have an equal capacity with reference to others. The test has not proven of much practical value. The blue color imparted to the urine however enables one in making a cystoscopic examination to recognize the fluid more readily, as it is ejected from the ureter and thus assists the examiner in locating the ureteral opening.

More was hoped from the phloridzin test, as healthy renal epithelium was considered to be necessary for the transformation of this substance into glucose. Recent investigations however have shown that in animals after nephrectomy sugar is found in the blood after the injection of phloridzin; and if this be so, a *phloridzin diabetes* can no longer be considered an index to the functional capacity of renal epithelium. Dr. Parker, house physician at St. Michael's Hospital, has applied these tests in a number of patients under my care but in none did they furnish us with information of any value.

Urinary lithiasis, tuberculosis, tumor, etc., are frequently

characterized by a fairly distinctive course, yet the diagnosis usually depends upon the differentiation of symptoms varying in character and degree, more or less common to all of them. These symptoms may arise primarily from the disease itself, or often secondarily due to a superadded infection, or from the mechanical effects of the lesion upon the urinary passages. Thus pain, hæmaturia, pyuria, interference with the normal function of the kidneys or failure of the general health may occur in any of these conditions. The difficulties in the way of diagnosis are further increased from the fact that in all of these conditions *multiple foci of involvement* may be present in a given case, affecting widely separated areas of the urinary tract. As it is usually for one or more of the symptoms above mentioned that the patient first seeks relief, I wish to consider a little more in detail some of the points in differential diagnosis—(1) of the diseases themselves, (2) of the location of disease, (3) the difficulties presented, and (4) the limitations of the ordinary diagnostic methods.

(1) Pain as a general and localizing symptom. This is one of the commonest and most useful diagnostic symptoms in these diseases, yet it is well known that it may sometimes be entirely absent in any one of them. While often fairly characteristic as in renal colic, yet in many cases neither its presence, character nor distribution can be depended upon either to indicate the nature or location of the trouble. Thus blood clot, particles of tumor, obstruction from kinking of the ureter in nephroptosis, pressure of tumors upon the ureter from without, or infections, may all produce symptoms closely simulating renal colic.

Again right-sided ureteral calculus may so closely simulate appendicitis as to deceive even experienced surgeons. In two of the cases of this disease which I have seen during the past year appendicitis had been diagnosed and the patient operated upon without relief.

In rare instances the pain may be on the side opposite to the lesion. This was the case in a patient of mine in whom tumor of the left kidney had been diagnosed and the patient operated upon. Intermittent profuse hæmorrhage had continued, and the tumor enlarged so as to be readily palpable on the right side. She was operated on by Dr. E. E. King and a large hypernephroma removed, the patient making a good immediate recovery, but ultimately died in nine months from pulmonary metastases.

Tumors of the bladder occurring as they so frequently do near the ureteral orifice, may produce pain in the *corresponding*

kidney, while at other times calculus in the lower end of the ureter may produce vesical symptoms.

In a case which I had with Drs. Uren and Silverthorn in St. Michael's Hospital during the past summer the patient suffered from intense pain above and to the left of the umbilicus. A firm tumor could be palpated in this region, movement of which caused the pain to radiate into the left inguinal region. The patient's general condition did not permit an operation, and at autopsy we found a hypernephroma completely surrounding the upper part of the ureter. Here the urinary findings were entirely negative.

That even cystoscopic examination, ureteral catheterization, X-ray, etc., may at times fail was shown by a case which I recently saw with Drs. A. Adams and Cummings, in which recurring attacks of pain, apparently typical of renal colic, were entirely negative to these methods.

Next to pain, possibly hæmaturia is the symptom for which patients most commonly consult the physician. While this symptom is often associated with others which help to establish the diagnosis, it often remains for a long time the only evidence of trouble. This *symptomless hæmaturia* was well recognized by the older clinicians, Sir Wm. Gull speaking of some of them as renal epistaxis. Anyone with a large experience in urinary analyses will recognize it as one of the most difficult of all urinary conditions to diagnosticate. It is now more generally recognized than formerly that it may be an early symptom of interstitial nephritis or may occur at intervals throughout the course of the disease. It may even be due at times to an area of nephritis localized in one kidney.

Fenwick says interstitial nephritis accounts for 12% of cases of painless hæmaturia. French authors were the first to emphasize the importance of this symptom, and described cases characterized by it as hæmorrhagic nephritis. Cystoscopic examination has shown that the hæmorrhage is often from one kidney only. In my experience these cases are not at all uncommon. A typical example came under my observation a year ago last summer. A young man of 17 years of age in February, 1908, had his tonsils removed and a few weeks later began to suffer from profuse hæmaturia. This would abate for a short time to be followed by exacerbations. Hyaline, granular and blood casts were always present. X-ray and other examinations were all negative. Under rest, careful diet, calcium salts, turpentine, etc., he has gradually improved, though slight albuminuria, cylindruria and microscopic hæmaturia still persist.

As painless hæmaturia also occurs at times in tumor, tuber-

culosis of the kidney and calculus, the differential diagnosis is a matter of much importance. The more profuse hæmaturia is especially characteristic of tumor and interstitial nephritis, and at times of ruptured varicose veins.

Most of the standard works in urinary diagnosis describe various means by which the source of the blood may be determined. While separately or together these methods are often of value, in many cases they are entirely inadequate and some of them in my experience are quite useless. In Watson and Cunningham's recent work, in this connection, reference is made to the diagnostic significance of the color of the urine, the distribution of the blood in the two or three glass test, the quantity of the blood, whether continually or intermittently present, the shape and arrangement of the corpuscles (*rouleaux*), the association of the blood with other elements as casts, crystals, pus, particles of tumor, special type of epithelium; the reaction of the urine; specific gravity and amount of albumin. In many difficult cases of symptomless hæmaturia all of these tests may be applied with most painstaking care, and yet it is impossible to draw safe inferences from them.

The color for instance will depend upon the quantity of the blood, the length of time it has been retained before voiding and the reaction of the urine. The inference that in *renal* hæmaturia the blood is more evenly distributed in all portions in the three glass test is often correct, though I have seen cases of *renal* hæmaturia in which the first glass contained the most blood.

As to the quantity, it is usually most profuse in cases of tumor, though in a given case it may be equally profuse in interstitial nephritis. Whether it is intermittently or continually present is of little help, as in most of the difficult cases that come under one's observation it is intermittent. As to the size, shape and arrangement of the red cells, this depends more on the reaction of the urine and the length of time that it has been retained than on the etiological factor producing the bleeding. The association of the blood with other elements is equally unreliable. In the first place the amount of blood obscures the microscopic field in many cases. Much reliance is usually placed on the presence of casts as pointing to the renal origin of the hæmorrhage but in view of recent experiences this cannot be considered a safe guide in all cases. Epithelial and blood casts have most significance, but hyaline and granular casts are so frequently found in renal tumors, pyelitis, ureteral calculus and vesical conditions, with ascending infections, back pressure or other causes of vascular disturbance of the kidneys, that they cannot be

taken as certain indications that the hæmorrhage is from the kidneys. In one of my cases in which Dr. Cummings demonstrated the calculus in the lower end of the ureter, both hyaline and granular casts were repeatedly found in the urine.

The predominating type of epithelium is even a much less reliable guide than the presence of casts. Those who speak of the value of this sign do not seem to take into account the transitional character of the epithelial lining of the urinary passages, the type of cell depending on the layer from which it is derived. Moreover, if the nature of these diseases is considered it will readily be seen that the epithelial lining of the whole tract is often subjected to at least superficial irritation and often multiple involvement. My opinion however is not based on theoretical considerations, but on disappointment at the practical assistance afforded by a study of the character of the epithelium in the deposit. I have never found it of the slightest value in a difficult case and believe it is one of those signs passed from text-book to text-book which is so useless in practice that it might well be discarded. As to the presence of crystals they may occasionally offer a hint as to the underlying condition, but crystals of various kinds are so commonly found in urine in ordinary routine examinations where there is no evidence of any renal disease, that one would be very careful in attaching much importance to their presence in an obscure case. Bits of tumor may occasionally be found and assist in diagnosis, but in practice this is not common, and moreover they would usually give no clue to the seat of the trouble. As to the reaction of the urine, where it is ammoniacal, the disease is most likely to be in the bladder, but we are not equally warranted in excluding the bladder because the urine is acid in reaction. The urine may become ammoniacal in any situation where there is retention and infection with bacteria capable of producing decomposition of urea, so that the reaction of the urine is only of relative localizing value.

An excess of albumin compared with the amount of blood would be suggestive of renal involvement, but that this inference is not always warranted was shown in the case of a lady who consulted me a few days ago on account of a profuse attack of hæmaturia which she had had about a month previously. The urine at the time of my examination was practically free from blood, but contained 3% albumin by bulk, some pus cells, hyaline and granular casts and some calcium oxalate crystals. Cystoscopic examination by Dr. Geo. E. Wilson demonstrated a small sessile tumor near the left ureteral orifice. This tumor, by back

pressure or by producing vascular disturbance in the corresponding kidney, was apparently the cause of the large amount of albumin in the urine. Ascending infections of the kidneys may account for an excess of albumin in proportion to the quantity of blood.

It will be readily conceded that the diagnosis depends more on the whole clinical picture or on an association of symptoms rather than their significance taken separately, and one is frequently able to make in this way a remarkably accurate estimate of the case. Yet that there are limitations to the shrewdest calculations based on these methods is only too frequently experienced.

THE EARLY DIAGNOSIS OF PHTHISIS*

BY DR. JOHN A. MACGREGOR, LONDON, ONT.

Mr. President and Gentlemen:

In thanking you for the honor which you have conferred on me by requesting me to present a paper before your Society, I am fully cognizant of the serious responsibility which I have incurred in accepting. No apology seems necessary for reviewing the data which will lead to an early recognition of chronic pulmonary tuberculosis, a condition which all too frequently presents itself in a hopelessly advanced stage.

Probably in no other disease does the ultimate restoration to health and usefulness depend so much on detection in its incipency. In quite the majority of cases the evidence available is sufficient to furnish this early diagnosis if we appreciate the significance of the early symptoms, conduct a careful physical examination—often on more than one occasion—and interpret the import of the early physical signs. Unfortunately we are all, on occasions, more or less remiss in our duty in this respect and delayed and erroneous diagnoses are too often responsible for the incidence of the later phases of softening and excavation which so greatly impair the prospect of recovery.

The early diagnosis implies a recognition of the “incipient” case in which the lesion is a limited, usually apical or sub-apical, infiltration, and is associated with but slight, or even no, constitutional symptoms.

In quite a number of cases constitutional manifestations appear in advance of the corroborative physical signs. In not a few cases physical signs of greater or less extent, and denoting more or less activity are encountered in the absence of general symptoms.

Of importance is the discovery of a more or less intimate exposure to a possible source of infection. This may be in the home or place of employment. It may be in the person of a parent or other relative, a fellow-employee or a personal friend. In but few instances can the source be said to be unknown. The information may not be obtained at the first inquiry. It may have been forgotten and be recalled at a later visit. The illness of the suspect may have passed muster for “chronic bronchitis,” “asthma,” “stomach trouble,” and the tuberculous nature may

*Read before the West Elgin Medical Society, March 21st, 1910.

be denied. However, an inquiry may reveal a condition of debility or a cough of long standing which will in most cases justify one in characterizing the process as tubercle.

Of the early manifestations, a vague, ill-defined onset, with loss of energy, inability to sustain physical or mental effort, slight impairment of nutrition and digestive disturbance is all too easily misinterpreted and the patient informed that he is run down or suffers from debility or neurasthenia. The development of pulmonary symptoms in those in apparently good health we are too ready to look on as an obstinate cold or an attack of grip which tends to hang on. The patient who suffers from a series of colds, more especially if they persist during the summer, or the subject of anæmia or chlorosis, should be subjected to a rigid general and physical examination.

A large percentage of patients who later develop tuberculosis are habitually light in weight, a condition which is probably predisposing. Slight loss of weight noted by weekly appeals to the scale occurs in many cases, but the average weight may be maintained, or a considerable gain occur, in the presence even of a moderately active lesion. Pronounced loss of weight is a feature rather of the later phase, as is also any notable loss of strength.

In the incipient stage a regular noting of the temperature is of great importance, and I cannot emphasize this too strongly. The observation should be continued over a period of some few days, and preferably at two-hour intervals. It is necessary to see that the thermometer is properly placed, and is maintained so for three minutes, as the registration of slight degrees of fever requires a longer time than the more pronounced elevations. The morning temperature, and, not infrequently, the afternoon as well, may be subnormal—97° to 98° F.—in those with impaired metabolism, and this may, in conjunction with other findings, be of much diagnostic value. Generally speaking, a daily general range of temperature, slightly above the normal, should direct suspicion towards tuberculosis. These rises, slight though they may be, may be noted only following physical exercise, or at the time of the menstrual period in women.

Of scarcely less importance is the observation of the pulse. At times it is of normal frequency or shows some lowering of tension. In the majority of cases there is more or less tachycardia or what is of equal importance, a condition of irritability, the frequency rising to 80 to 100 with but slight physical exertion or emotion.

Sweats are significant of secondary infections connected with the late stages; but quite early one frequently observes a clammy moisture of the palms of the hands.

The presence of cough may be denied by the patient, but commonly one notes its unconscious occurrence during the examination as a short hack, with or without some moisture.

The expectoration, if any, in early cases possesses no diagnostic characteristics. It is mucoid and frothy and of bronchial origin, and the absence of tubercle bacilli, even on frequent examination, is not to be construed as negating phthisis. They appear only when the tuberculous foci are breaking down, and are a late manifestation.

A more or less persistent huskiness of voice, though slight, should excite suspicion, even though the laryngoscope reveals only a catarrhal process, and demands a thorough investigation.

Hæmoptysis is not infrequently the startling feature which determines the patient's first visit to the physician or brings the physician to a sudden realization of the gravity of the situation. In most instances, especially if it is at all pronounced, it is significant of the later excavative period, but it may occur comparatively early as a staining of frothy bronchial sputum. One must be careful to exclude other causes, such as a slight epistaxis, a mitral stenosis, or an acute catarrhal process of the upper respiratory tract as causes.

In the great majority of cases in which the hæmoptysis is supposed to denote the inauguration of a tuberculous deposition, it is actually the evidence of renewed activity in an old, more or less quiescent, lesion.

Little or no stress can be placed on vague pains in the chest wall, which may be complained of early. They are noted as the manifestation of a phobia. Rarely they may be the result of an early apical pleuritic involvement. Of paramount importance is the recognition of the tuberculous nature of the so-called primary pleurisies of both the dry and serous varieties. They are not rarely credited to exposure to cold or to rheumatism.

The exudative type is frequently latent, and if the effusion is but slight is commonly overlooked unless the physical examination is carefully conducted. This pleuritic involvement is often the precursor or associate of an apical localization as well as the basic fibroid phthisis.

In these early cases the examination of the blood offers nothing of diagnostic importance. The pallor of the patient may be in marked contrast to the actual blood findings, which frequently are normal. A slight anæmia of the secondary or of the chlorotic type may be present, while the leucocyte count remains within the normal range.

The appearance of physical signs adds corroboration to a

diagnosis which should be pretty well established as a rule from the history and general symptoms. As early evidence they are not as a rule of themselves of signal value, as by the time one can from the physical signs say that the patient is suffering from phthisis in the so-called first stage excavation is already proceeding. At an early period, physical examination may yield a completely negative result, a point not to be overlooked. One is too often ready to declare the lungs "all right" on an all too superficial examination. In all instances the patient's chest should be bared to the skin, and it is often wise not to venture too positive an opinion without one or more than one subsequent examination.

Inspection and palpation furnish but little information in incipient cases, though occasionally one may note some diminution of apical respiratory excursion or a slight retraction.

Percussion as usually applied is not of much value until quite extensive pulmonary infiltration has occurred, but one may elicit slight narrowing of the "suspender" zone of resonance, and with greater care as to technique, some muffling of the normal resonance or even slight elevation of pitch may be determined with even very limited lesions.

The earliest physical signs are usually furnished by a careful auscultation. Harshness of respiration, especially involving the expiratory murmur, which may or may not be prolonged, with an apical limitation, bearing in mind the physiological differences between the two sides, is suggestive. The addition of an occasional sticky click or a pleural friction, or ever so few fine rales at the end of inspiration, which may be brought out only with a deep inspiration or after a cough, is ominous.

An increased transmission, together with an elevation of the pitch of the whispered voice, is a valuable sign which can be elicited early.

Definite bronchial breathing denotes considerable consolidation of pulmonary parenchyma, and with or without any notable moist sounds is a manifestation of a well-established lesion.

Much is claimed by some for the fluoroscope in detecting incipient cases, but though I have had no personal experience with its use I am of the opinion that a lesion of sufficient extent as to make itself evident by this means would give rise to significant physical signs. The promiscuous use of the tuberculins as a short cut to a diagnosis I cannot too strongly condemn.

But with a provisional or established diagnosis based on various combinations of symptoms and physical signs one may seek confirmation by recourse to some of the specific tuberculin

reactions. With the original subcutaneous and the more recent Von Pirquet methods of application I am not familiar, but I am convinced of the value of the Moro and Calmette reactions. The objections to the use of the latter urged by some may be well sustained, but my own experience, based on a limited number of cases, confirms the opinion that, used in eyes free from irritation, its employment is quite harmless, while its reaction is quite distinctive.

Unfortunately these reactions do not distinguish between healed lesions and those more or less active. The absence of reaction in the terminal phases, owing to the exhaustion of the cell activities, is of little moment, as the tuberculous nature is usually only too readily recognized.

Here again let me impress the value of the general manifestations in the early recognition of pulmonary tuberculosis. A period of ill-health with disturbance, though slight, of pulse, temperature and digestion, loss of relish for food, trifling physical incapacity, slight loss of weight and anæmia precedes, in the majority of cases, the development of the physical signs which at first are often indefinite.

The laity to a great extent, and, unfortunately, many of the profession, appreciate pulmonary tuberculosis only when cough, expectoration, wasting, hectic and exhausting sweats become prominent features and signal a stage of the disease precluding the re-establishment of even a reasonable measure of health, or what is, unfortunately, more common, presaging an impending dissolution.

In conclusion, gentlemen, I shall be grateful to you for suggestions which will be of further aid in the early recognition of this scourge, so capable of amelioration or cure in its incipency, but which, when it has progressed to its later stages, levies so extortionate a toll of human life and adds so much to the burden of human suffering.

MEDICAL "PROCESS BUILDING"

JOHN HUNTER, M.B., TORONTO.

Visitors to our National Exhibition always find much that interests them in watching the various processes through which the raw material has to be passed before the finished article is produced. The medical colleges, now open, are the "process buildings" through which the "raw material," the medical students, pass the successive stages on the way to full equipment as physicians and surgeons.

The character of the raw material entering our colleges is graded by the will-power, mental aptitude and diligence of the pupils; and by the efficiency of our primary and secondary schools. A medical student who does not want his whole career as a physician handicapped, should not enter his college without a broad and thorough literary training—humanitarian and utilitarian. His efficiency in Latin and Greek will greatly aid him in understanding and remembering technical terms. Any physician who cannot read French and German intelligently, and rapidly, has only a somewhat second-class literary qualification for medicine. Translations are valuable, but one loses much of the inspiration that comes with reading in the original language. The physician's influence over many of his patients; his status in the profession and in his social circle, are, at least, as much indebted to his literary refinement as they are to his scientific attainments. Through neglect, or inability to acquire a liberal education in youth, the absence, or want of it, is only too lamentably noticeable in the ranks of our profession. Many of the papers read at our medical meetings are crudely written, and the discussions that follow give but little evidence of mental culture. While those of us "who are getting gray" may put up an excuse for our illiteracy by saying when we were young "times were hard" and secondary schools "few and far between," but the youth of to-day have no excuse for being illiterate other than their own indolence.

Taking it for granted with the unparalleled facilities nowadays for acquiring a liberal education, that no ambitious young man would think of entering upon a medical course without it, should he, after matriculation, or far better still, after graduation in the Arts course, adhere rigidly to the curriculum devised by his college? Emphatically no. It may be quite true that the curriculum has been the work of intelligent, experienced men, yet "the exhausting humdrum of so-called practical routine drill, which sometimes unfortunately fills all the hours of the day and night would never make a capable physician." The student

cannot acquire self-reliance and the scientific spirit too early. He may by the "cramming process" be able to pass creditable examinations, and perhaps graduate with honors, and yet be a very unreliable and unscientific physician. It is quite customary to rather belittle research work, by saying that much of it is not practical. The physician who can make a "snap diagnosis" and give his patient something to relieve him is the practical man! the veritable "Johnny on the spot!" It does not seem to matter much to him how ignorant he may be in regard to the structures and functions involved in the morbid process, so long as he can "hold his patient." It is the absence of this scientific spirit that makes so much of our work empirical, or, in other words, haphazard.

The student who is satisfied with what knowledge he can acquire from teachers and text-books cannot be preserved from hopeless deterioration and inefficiency. Let him listen respectfully and attentively to his teachers, and read as many of the best text-books and journals as possible, but he must acquire an insatiable thirst for that scientific knowledge only to be found first-hand in the dissecting room, laboratory and sick-chamber. Pure science, like the vascular current, which branches out and supplies every tissue in the body with nutriment, illuminates every pathway in the art of medicine. The physician who has made a careful study, *e.g.*, of the structures and function of the stomach, is in a much better position to treat morbid gastric conditions than one who is ignorant of both, and says to his patient: "Oh, you have a sour stomach; I'll give you something to settle it."

Unlike the artisans in the "Process Building," who can turn out the finished article, the college professors can only do the initiatory work. The youth who has just graduated should be able to say:

"Yet I feel as glad I'm living as does anyone I know;
All my life is still ahead of me, ambition's tide at flow."

If possible to avoid it, the young physician should not "set up" for himself on leaving college. Probably more men have had their whole professional career impaired by an undue haste to get "a practice" than have been ruined by rum, lust or gambling. That mediocrity of success, everywhere so evident in the ranks of our middle-aged men, is largely due to this cause. The young graduate who simply follows the routine of the college curriculum does not acquire the self-reliant, scientific spirit so essential for his life-work. He settles down at once in some village, town or city, and as he has simply memorized his work one case will be of about equal interest with another—scabies will be

on a par with tuberculosis. He will not likely trouble himself with taking a history of his cases, so that at the end of each year or decade he will have only an elusive memory to guide him in the way of experience. An early marriage, the care of a home, exploits in real estate, in mining or other stocks, excursions in municipal, provincial or dominion politics—these, with the drudgery of the daily routine in practice, will occupy all his time; mid-life is soon reached, the possibility of any improvement in his methods vanishes and one more is added to the ranks of mediocrity. In the primitive stage of a community's life such a type of physicians might deserve some respect, but in an advanced stage of civilization mediocrity in medicine is inexcusable.

How are recruits from a non-progressive class to be kept out of the ranks of the medical profession in Canada?

1. Let our colleges, while demanding an adequate knowledge of the fundamental subjects laid down in the curriculum, yet encourage original research work and the development of self-reliance and resourcefulness in each individual student. Is it not far better to have students challenge the statements of teachers and text-books, and to give a reason for doing so, although they may be in error, than to have them, like sponges, simply absorb what they read and hear and give it out again, unassimilated, at the examination table? (2) Let the young graduate seek a hospital appointment or an apprenticeship with some progressive and experienced physician for two or three years. (3) Let him eschew love, business and politics until he has provided himself with an efficient laboratory equipment, a large and carefully selected library, and has travelled pretty extensively and made himself familiar with the best work being done in British and foreign hospitals. With some such literary and technical equipment as outlined above, with an insatiable thirst for more knowledge; with dauntless courage and tireless industry our young physicians would be a splendid acquisition to our ranks and be of inestimable service to any community in which they settled. Every student and graduate should catch some of the spirit so vividly expressed in the parlance of the "Sunny South":

"Yo've got ter dig de garden
 Ef yo' want to have de rose,
 Yo've got to keep a wo'kin'
 Wid yo' shovels an' yo' hoes;
 Yo've got ter git up early
 An' keep busy all de day
 Ef yo' want ter gather pansies
 In de happy month o' May."

SECTION OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY, TORONTO ACADEMY OF MEDICINE*

BY DR. J. PRICE-BROWN.

Gentlemen:

I desire to express to you my sincere appreciation of the high honor you have conferred upon me by electing me to the responsible position of Chairman of this Section. I need scarcely say that it is with feelings of gratitude on the one hand and temerity on the other that I accept this office. The gentlemen who have filled this chair in the past have been distinguished not only by the faithfulness with which they have discharged the duties devolving upon it, but also by the erudition and scientific knowledge which they have manifested when occasion required. The onus of the chair has increased from year to year, and the manner in which its dignity and influence have been sustained has called forth, I feel sure, the willing support and high appreciation of every member of the Section.

This year, by your favor, based upon the process of alternation from ophthalmology to oto-laryngology, and on the principle of *seniores priores*, the occupancy of the chair has fallen to my lot, and I assure you that I shall perform the duties pertaining to it as faithfully as I can; and, weak though it may be, with all the ability that I possess, hoping and believing that I shall receive the cordial support and assistance not only of the Secretary and Editor, but also of every other member of the Section.

Let it, if possible, be our banner year!

There is a large measure of charity in the heart of every man, no matter how high he may have climbed the professional ladder or penetrated into the holy of holies of collegiate halls; and while we may rub each other pretty severely when occasion demands it, let us do it in all fairness and with that fraternal *bonhomie* that sharpens the sweetness of the rose and makes the frictions of life the heralds of its pleasures.

In selecting a subject for an opening address there are many themes that could be drawn upon, and it has been suggested that I might combine a brief reference to the long past with a running commentary upon the achievements of the present year in that division of our sectional work with which my professional life is associated.

Looking back over more than four decades to the days of my

*Chairman's address, October 20, 1910

student life, I well remember one of our professors speaking of what he called nasal catarrh as something that covered all classes of intra-nasal disease, but as something that, try as we would, never could be cured. What he meant by catarrh he did not explain, nor did I question; but simply accepted the statement as a fact issuing from the depths of profundity, the correctness of which could not be questioned.

On a similar occasion another professor, whom we all looked upon as rather slow, but so sure that the accuracy of his judgment could never be doubted, announced from the rostrum to a large class of students that absurd and eminently dangerous attempts were being made by certain rash surgeons to pass instruments into the larynx. He sincerely hoped that no member of his class would ever violate the fundamental laws of physiology so far as to attempt such an unwarranted and vicious a procedure.

I will not attempt to burden your minds with any lengthy remarks descriptive of the historic growth of our special sections of medicine. You are all familiar with the salient points. Still it might be well to note that certain divisions of the subjects that demand from us the most painstaking zeal, and the most competent skill, to deal with them successfully, were either entirely unknown or ignored by our professors of a quarter of a century ago.

Bosworth, in his edition of *Diseases of the Nose and Throat* for 1881, does not mention the ethmoid cells at all, neither does Sajous in 1885. The only allusion that the former makes to the frontal, maxillary and sphenoidal sinuses is to say that he supports Michel's belief that ozena has its origin in chronic disease of the lining membrane of the sinuses. Sajous also supported this theory, which was really ancient of days, as it was taught by Celsus. Yet only a few years ago certain rhinologists advocated the origin of atrophic rhinitis as very plausible and quite new.

This is the old catarrh of which the ancients spoke so freely. Susruta, a learned Hindu, centuries before Christ, spoke of catarrh of the nose, which he treated with sternutatories and ointments. Some of his directions were very explicit. For instance, the patient was ordered to lie on his back and hold the tip of his nose with his finger, while his physician dropped warm oils into his nostrils. During this period the patient was not to get angry, nor speak, nor cough, nor swallow the oil, but simply to spit it out as it entered the throat.

Sanitary laws were not ignored in those early days. Charaka tells us not to eject the mucus or phlegm from one's nose into a place that is crowded. Hippocrates tells us that one of his seven cases of catarrh was cured by coitus. Whether it was an ozenic case or not we are not informed.

Even our novelists have not entirely ignored the catarrhal condition, for Zola, speaking of one of his characters, says, "She smells in her nose as if she were sucking her feet."

Some of the old prescriptions were rather amusing.

Pliny recommends a man whose nose stinks to kiss the nostrils of a he-mule, and that a woman similarly afflicted should kiss the nostrils of a she-mule.

Sometimes the writers broke out into rhyme, as in Ordronaux's translation of "De Rapedine Vocis":

"Oils and raw apples, nuts and oils, 'tis said,
With such catarrhs as settle in the head,
And leading to a long, intemperate course
Of life, will render any person hoarse."

Then comes the cure "De Remedis Catarrhi":

"Fast well and much, eat hot your daily fare,
Work some and breathe a warm and humid air.
Of drink be spare, your breath at times suspend,
These things observe, if you your cold would end."

Coming down from the long past to the actual present, we have arrived at a period when every part of the human body is minutely and anatomically investigated. Instruments have been adapted for the examination of inaccessible cavities, and scientific knowledge has enabled the skilled surgeon to explore and heal and operate upon any section of the eye, ear, nose and throat that from either injury or disease demand his attention.

Of the eye I am not competent, nor is it necessary for me to speak to-night. Our ex-chairman, our venerated, but not by any means venerable, Dr. Reeve, will favor us with one of his ever-valuable papers upon the subject.

Of oto-laryngology, however, I must say a word. The tendency of the multitude of earnest workers, often in the narrow field of a single section is possibly toward too great enthusiasm, pursuing any object in a single line to the farthest end. For years now, particularly on this continent, in our own specialty, the trend has been toward the extension of radical operations. To carry out the principle, which as a general rule is a perfectly good one—that what is worth doing at all is worth doing well—seems to have been the motto. But the literal wording does not always contain the truest meaning.

To remove and obliterate the frontal sinus whenever seriously diseased is the teaching of the day. To perform a radical operation upon the maxillary antrum in all cases of chronic purulent

sinusitis, removing the entire mucous membrane and favoring granulation, is also the teaching widely adopted.

In all cases of deviated septum the operation of sub-mucous resection is the one performed, dissecting off the perichondrium, and removing the part of the cartilage and bone that is displaced in its entirety.

When the faucial tonsils are diseased or hypertrophied, and this hypertrophy is claimed to be a disease, enucleation is adopted as the only scientific and correct method of treatment.

When the œsophagus or inner larynx is diseased, or foreign bodies are lodged therein, we are told authoritatively that it is criminal to attempt to operate upon the parts or to remove the foreign body, except by the use of the direct method, the œsophagoscope or bronchoscope.

Now these methods in selected cases are all good. They all are the products of a vast amount of careful investigation and research of many very eminent men. Yet, are they invariably necessary? Have we suddenly arrived at that heavenly region where perfection is reached?

It is generally believed that laryngology and rhinology and all the other ologies are progressive sciences. We all truly believe that the progress in all of them during recent years has simply been marvellous. But we are not millennialists. We expect the world to exist for hundreds and thousands of years yet; and the rhinologists and laryngologists to practice on the noses and throats of the people during all the centuries; but wherein will be their enthusiasm if the instruments are all made before they arrive on the stage of action? If the flowers are all gathered from the garden and there are no more dizzy heights to scale?

But, thank heaven, the pendulum is always swinging. This year in some regards it seems to have reached its limit, and is slowly commencing the return journey.

Let us examine it for a moment.

Milligan, in speaking of deformity of the nasal septum, says that opinions still differ as to the best form of operation for the treatment of deflected septum—the important aim being to secure by some means patency of the nasal passages in all cases of nasal or laryngeal disease.

Cobb, in his report to the Laryngological, Rhinological and Otological Society, at its recent annual meeting in Washington, refers to fifty cases of resection of the nasal septum of long standing. Most of them were of from four to six years after operation. These are his own words: "In no case examined was there reproduction of the cartilage."

Richards, in children, has abandoned removal of the cartilage and has adopted a species of resection in which the cartilage is retained, but replaced. He says of his new operation: "There is no sinking in, as no cartilage has been removed, it has only been reshaped."

Mosher says that the difficulties in submucous resection occur most generally in children; and that a number of his adult patients have complained of the scabbing which resulted from the operation and lasted for one or two years.

Lutz says that in all these cases we should remove as little cartilage as possible instead of as much; while Yaukauer, one of the most noted American operators, says that scabbing is one of the worst results that we have to contend with; while he denounces the operation in children, telling us that out of three hundred submucous resections that he has done only six were in children; and in the latter he only removed enough cartilage to insure proper breathing.

And last of all Jonathan Wright, one of the greatest American authorities, gives it as his opinion that in cases of atrophic rhinitis submucous resection should never be done.

Perhaps I may add my own opinion for what it is worth. The aim of the future will not be to do the most perfect submucous resections, removing the offending cartilage and bone and retaining the mucous membrane in the most skilful way possible. But it will be to re-form, re-place, but not to remove the body of the partition wall which nature has placed within the nose of every human being. The cartilage and bone of this partition wall are not diseased, they are simply overgrown, elongated, curved, twisted, bent; and instruments will be devised and operations performed by which, when necessary, sections can be removed or deformities corrected, in such a manner that the solidity of the wall will remain intact; and the normal mucous membrane will be retained in position without the opprobrious scabbing. This may be an idle dream, but I believe it will be accomplished.

It will not be a Watson operation, nor a Sluder, nor a Gleason, nor a Roe, nor an Ashmayer, nor a Price-Brown, but it will be the result of keen and close investigation of many minds into all methods—the result being the adoption of no fixed plan, but the scientific accomplishment of a much-desired end.

Of distinct advancement in the art and science of rhinology during the past year may be mentioned the more general acceptance of Onidi's views upon the anatomical relationship which exists between the posterior ethmoid cells and the optic channels.

Herbert Tillie's pregnant words in reference to the growing

feeling of conservatism in the matter of operating in suppuration of the nasal sinuses, and especially the frontal sinus, are certainly worth remembering.

One of the most notable marks of progress during the past year is the advancement that has been made in the line of bacteriology. The results that have been obtained in the investigation of tuberculosis and diphtheria have led to the more careful consideration of acute affections; and diseases that were supposed to be diphtheria, have, on closer examination, been found to be due to staphylococcus and streptococcus infection. Some of these cases have been attended by serious glandular disease and subsequent anæmia, indicating the necessity of careful attention to the throat in all doubtful cases.

Vaccine therapy is also receiving a larger amount of attention than ever before. Many investigators believe that the preparation of vaccine from the individual patient produces more satisfactory results than when the vaccine prepared and sold by the chemist is used. This looks something like the old style inoculation days, when the virus was passed year after year from child to child.

The control of the administration of vaccines, as advocated so strongly by Sir Almroth Wright, is an important feature that should be of great assistance in the investigation and control of disease. By taking the opsonic index before and after the application of the vaccine, the surgeon should be able to say definitely whether he has or has not a remedy which has an influence upon the resisting power of the tissues. He maintains that this gives a control which cannot be obtained by the mere observation of the results upon the patient—thus adding one more fact to the sum of knowledge upon this new and difficult question.

TONSILLOTOMY AND TONSILLECTOMY.

The latter, so strenuously advocated in the United States, made slow progress in England until the present year. Now it is becoming more generally accepted as the best means of operating in cases of chronic disease or enlargement of the faucial tonsils, particularly in adults. There was a spirited discussion upon the subject at the meeting of the Laryngological Section of the British Medical Association. Dan McKenzie believes in complete enucleation when the tonsil is the seat of frequent inflammation or the cause of quinsies; when recurrence follows ordinary tonsillotomy, when there is tuberculous enlargement of the cervical lymphatic glands, and when the tonsils are flat and buried. But he says that simple tonsillotomy is sufficient in most cases for the relief of respiratory obstruction.

St. Clair Thompson says that the operation is as old as Celsus. It has simply been revived. Instead of dissecting out the tonsil, he simply uses the guillotine, pulling the tonsil out of its bed by means of forceps, removing it entirely in the majority of cases in this way. The objection to dissection was the profound anæsthesia required.

Bryan said it was absolutely necessary to remove the entire gland. Otherwise subsequent trouble was the rule.

Dundas Grant said that very excellent results followed the use of the guillotine; but he believed we should have no fixed rule, but practice eclecticism in the choice of operation. He considered that leaving a portion of the tonsil was not a serious matter, possibly a beneficial one, if the crypts were left clear. He moreover desired that the protective character of the capsule should be remembered, and that its complete removal was open to question.

Watson Williams asked what definite information did we possess regarding the physiology of the tonsils? He also questioned whether complete removal was universally required.

As to methods of enucleation, there are many. When at Manhattan Eye, Ear and Throat Hospital last week I saw it done in two instances, one in a man, the other in a boy aged twelve years. As I never saw the operation done in a similar way before, I will briefly describe it.

The patient was deeply anæsthetized under ether. The staff consisted of the operator, the anæsthetist, three assistants and nurses. One assistant held a reflected lamp, another held the tongue depressor. The operator then with an angular knife dissected the upper part of the tonsil away from the pillars anteriorly and posteriorly. Next he slipped the loop of a strong snare over a foretoothed retraction forceps, with which he seized the tonsil and lifted it from its bed, after which the snare was deeply adjusted round the base of the tonsil and the screw quickly tightened by the third assistant, until the tonsil was severed. The bleeding was severe, but not alarming. The adenoids were then removed, the adenotome with the upward sliding blade being first employed, then the curette, and lastly the digit. All being over, the patient was turned on his face in the prone position and wheeled into the recovery room.

A few words in reference to malignant disease. Medical treatment by the use of trypsin and fulguration has not been very satisfactory. Perhaps the same may be said of the use of Röntgen rays. Of radium there is more hope, inasmuch as it could be readily applied by means of the direct method. The wonderful

results as obtained by Dr. Wickham are still fresh in our memories, but it must be remembered that those results were obtained upon the cutaneous field or immediately within the mucous cavities. I do not remember him showing a single case in which he instanced the destruction of malignant tissues situated deeply within the nose or throat. This does not by any means imply that such a thing is impossible. If successful externally, it should eventually be successful internally.

Another subject that has obtained a good deal of attention is cicatricial stenosis of the larynx, and although the methods of Sargnon and Barlatier have many advocates in Europe, the gradual dilatation, as advocated by Delavan and Mayer, seems to be the most favored plan of treatment.

The electro-cautery puncture of the larynx in tuberculosis of that organ is increasing in favor, Dundas Grant and other laryngologists advocating its use. The young lady I showed last winter and show again now, is evidence of its efficiency. Her voice is clear to-day, and she has increased fourteen pounds in weight.

The use of the electro-cautery for the destruction of laryngeal papillomata, too, was strongly advocated by several Fellows of the American Laryngological Association at its annual meeting in June. Drs. Casselbury, of Chicago, Packard, of Philadelphia, and Simpson, of New York, all gave valuable testimony of the complete removal of the growths by its use. Casselbury's words are worthy of note. He says: "The papillomata are soft and easily destroyed, while the vocal chords, being fibrous, have much greater resistance. Attempts to pick off bits of the papilloma with forceps often stimulate regrowth; whereas, after cauterization it does not grow up again in the same spot. In time, all spots can be seared and the disease cured." Of course this treatment without the use of the bronchoscope and an anæsthetic would not be applicable to children.

Among the remarkable operations of the year is one by Greene, of Boston, who transplanted rib cartilage into the nose in a case of nasal deformity, both operations being done on the same man successfully while under ether. The result was excellent and was founded upon two similar operations done by Von Mangold in 1901.

Another remarkable operation, done by Casselbury, was the cutting in two of a large steel pin fixed in the left bronchus, and its removal by lower bronchoscopy, an indication of what can be accomplished by the scientific and dexterous use of the direct method.

The bronchoscope and œsophagoscope and the gastroscope have come to stay. This brings up a point that is being demonstrated at the present moment by Chevalier Jackson, the President of the Laryngological, Rhinological and Otological Society, and one of the most renowned bronchoscopists in America—that is, the still further division of our specialty. Jackson has already announced far and wide that he intends from now onward to devote himself entirely to the use and teaching of the use of tubes. That is, he is to be a lower throat specialist, and that only. Is not this as it should be? Would it not be better in every large community for certain skilled men to set themselves apart especially for this work, and for their laryngological brethren to refer all serious cases, particularly of the retention of foreign bodies, to their care?

When we consider the paucity of cases in which foreign bodies have to be removed from these passages, or the small number of instances in which growths require to be removed from the bronchi or œsophagus or stomach, is it wise for every laryngologist to consider it his duty to purchase the instruments needed, to acquire the necessary amount of practice to make himself skilled in their use, and then to operate upon the first suffering patient that presents himself? It seems to me that it would be a mistake. The old-time skilled laryngologist, who with his throat mirror can map out every part of the inner larynx and even explore the subglottic region, is rarely an enthusiast in the personal use of the direct method. Many times has he removed foreign bodies from the larynx, and not infrequently from the œsophagus, and rarely indeed has he met with failure. Still, he acknowledges the law of progress; and as down into the bronchus he cannot enter, he would gladly refer his case to the competent man who could.

On the other hand, if all young laryngologists were to enter the race, the lack of skill would kill the patient, while the scarcity of patients requiring the use of the bronchoscope would prevent any from obtaining the practice which is essential to the accomplishment of the most perfect work.

I have one other subject to touch upon in my somewhat rambling remarks. And that is the progress that has been made during the past year in otology. Upon this ground I shall be brief, as many of my fellow-members know much more about it than I do. Yet a short synopsis gathered from our otological literature may not be uninteresting. Perhaps in no other department of scientific medicine has there been more discriminating and thorough research made.

Milligan draws emphatic attention to the fact that tuberculous otitis media is very much more common than is usually supposed by otologists. He considers the high mortality of childhood, as well as the irreparable damage to the ear as an organ of special sense, which so often occurs, renders it imperative to recognize early the real nature of the disease, so that preventive treatment may be at once adopted.

In his experience twenty per cent. of hospital children under six years of age, suffering from purulent otitis media, owe the origin of the disease to an underlying tuberculous affection.

Chronic middle ear disease is drawing out much radical treatment upon the mastoid, dissecting everything away but the labyrinth, even invading the semi-circular canals. Last week I had the pleasure of witnessing an operation upon the mastoid at the Manhattan Eye and Ear Hospital. It was very radically done, nothing but the shell and semi-circular canals being left. The patient was a boy aged twelve years. He had been suffering from a running ear from infancy. There was partial deafness, but no other symptoms. The excavation made was very large. The dura was exposed and also the facial nerve. In closing the wound the operator made a T-shaped incision, the long line being behind the ear and deeply into the tissues, parallel and within the original cut. The cross section divided the epidermis of the concha into two portions. The upper one was then attached to the upper division of the external wound and the lower one to the inferior division. Then packing was done and the wound closed.

Jobson Horne, in the joint interests of insurers and insurance companies, lays more stress than ever upon the absence and value of reliable statistics. He says that we should know the average duration of life sufferers from oto-sclerosis; whether a perforated drum increases the life risk; and whether middle ear suppuration without other symptoms should induce acceptance or rejection?

He brought out one curious fact as a result of his investigations, that whereas various degrees of deafness incapacitates the sufferers for certain occupations, this deafness is a direct advantage in others.

I fear, gentlemen, that I have wearied you with my long and rambling dissertation. Still there are many interesting points that I refrain from touching upon, for which I trust you will give me credit. I have tried to keep my own special vagaries in the background, though, do as I would, I could not be entirely successful.

No doubt you will differ from me incidentally, but in this I have the advantage. A chairman in delivering his annual address is something like a clergyman delivering a sermon. His hearers cannot answer him back; although they can wisely lay it up for him, and return his thrusts in due season.

Gentlemen, I am grateful to you for your patient hearing. In the future conduct of our season's work I shall look to you for cordial support and sympathy, and to the best of my ability I shall endeavor to promote the highest interests of our section and faithfully discharge the duties of this high office.

Gentlemen, I declare that the fourth session of the Section of Ophthalmology and Oto-laryngology of the Toronto Academy of Medicine is now open.

Selected Articles.

A CLINICAL LECTURE ON PROGNOSIS IN PHTHISIS PULMONALIS

BY THOS. D. LISTER, M.D. (LOND.),

Physician to the Mount Vernon Hospital for Consumption; Physician to the Royal Waterloo Hospital.

I wish to talk to you about the consideration which should enter into our minds in attempting to make a prognosis in phthisis pulmonalis. To the public, prognosis is quite as important as diagnosis and treatment; one of the earliest questions asked by the patient or by his relatives is, What is going to happen? In phthisis pulmonalis the most experienced people may make mistakes, even after carefully considering everything, and that follows from the nature of the disease. No one can tell, in any case coming before them for the first time, what is the extent of the infection, its amount, or its virulence. And although one may form a shrewd estimate of the patient's resistance, yet the relation between the two remains for some time a matter of doubt. I propose to-day to make some sort of classification of the favorable factors and the unfavorable factors in forming an estimate of the outlook for the individual when we have diagnosed phthisis. Our diagnosis usually depends on physical signs, and many classifications have been adopted, but chiefly into first, second and third stage, or into a group of early, moderate, and advanced, according to the number of lobes affected. We must all recognize that that is a purely anatomical differentiation. It continually happens in patients whom I see in various capacities that they are recommended to do this, that, or the other in the way of treatment because their case is early, moderate, or advanced, on account of the anatomical extent of lung affected. It is obvious if we see a case for the first time and we find only an early lesion of one apex, we cannot tell how far that lesion will spread against the patient's resistance. Early prognosis is a dangerous matter to tackle; that is, on one interview we are very liable to make mistakes; in fact the whole burden of my remarks this afternoon will be to avoid being hasty in giving a prognosis in phthisis pulmonalis. But

we will assume that in the patient before us we have diagnosed phthisis, and that we are asked the question as to what is going to happen to him; is it a case which is going to get well, or one which is going down-hill? Let us attempt to classify the favorable and the unfavorable factors in such a case. For the present I will ask you to disregard physical signs in considering prognosis at the first attempt. You have to consider what effect the disease is producing upon the patient, and is he the sort of patient to be able to resist the effects of an infectious disease like this? Can you measure the amount of virulence or the extent of infection which he has received? Therefore the first question which comes before you is, how did the disease begin? If the onset was sudden and acute, with much fever, the outlook, so far as the onset is concerned, is less favorable than if it has taken a long time of malaise and discomfort before the patient begins to notice the cough, and then it is only a slight dry cough in the morning, and he notices that he gets more tired. If that onset has been hæmorrhagic I would modify what I said. But even then such a case beginning with much fever and with some malaise before pulmonary symptoms begin there may be a slight hæmorrhage, which alarms the patient, and he comes to see the medical attendant. That is a more favorable case than one which begins suddenly with severe fever, and perhaps severe hæmorrhage. But, on the whole, an insidious case is on the favorable side, that is to say, without fever and with but one attack of hæmoptysis. Frequent hæmoptysis is not favorable during the onset of the disease, especially if it is attended with considerable fever. The next point to consider is, how is the disease extending? Is it extending rapidly or slowly? Obviously, rapid extension is less favorable than slow. If there are multiple foci scattered about the lung, it is increasingly unfavorable. Slow extension and localization is much more favorable than rapid extension and the presence of multiple foci.

We now proceed to an examination of the constitutional effects of the disease on the patient. The modern study of phthisis has taught us that the temperature is the most important observation, either in a sanatorium treatment or in forming a prognosis of the case. It is very important not to be guided by a single observation. Certainly for prognosis one must see how the temperature runs under conditions of rest and excitement. In regard to temperature, instability is a very common feature of phthisis, and a wide range of temperature is always an unfavorable symptom, especially when that wide range is easily produced. Obviously the nearer the temperature approaches to

normal the better the chances for the patient. Remittent pyrexia is most unfavorable, and intermittent pyrexia is a little less unfavorable. A sustained temperature of between 100 and 103, even with so short a consideration as we are supposed to have had, justifies a very grave outlook. A small daily range of temperature, which fluctuates between 98 and 99.6, even under conditions of excitement and exertion, is much more favorable, and that temperature will probably fall to normal under conditions of absolute rest. The pulse rate is also of the greatest importance in the prognosis of phthisis. The more the pulse approximates to normal, the better the chance for the patient. But here again instability is of great importance. You know that in sanatoria visitors' day is always shown, in a considerable proportion of the cases, by a rise of two degrees in the temperature after the visitors have left, especially in the cases of less favorable outlook. A pulse of over 100, rising on excitement to 130, is an unfavorable feature. If the physical signs are limited, that is favorable; if extensive, the reverse. But physical signs are much less important than the constitutional symptoms in a disease like phthisis, which spreads in the body by infection. We cannot foretell by physical signs alone what will be the outcome of the case. It has been well said it is important to master one's stethoscope, and not to let the stethoscope master the observer.

Then in regard to the nature of the lesion. A tendency to fibrosis—and many cases of phthisis come before us when they are in the fibroid condition, with cavities—is much more favorable than extensive infiltration. Localized fibrosis means a tendency to heal.

Now with regard to symptoms: cough and expectoration. A slight morning cough is much more favorable than a persistent cough. Cough tends to become a habit in phthisical patients, and should be discouraged, as it tends to spread the disease and also to overstrain the lung. A slight morning cough may simply mean a clearing of the tubes of the secretion during the night. Scanty expectoration, tending to diminish, is much more favorable than profuse expectoration, or a tendency for it to increase in amount. The presence of tubercle bacilli in the expectoration is obviously of very little moment in prognosis. Their absence is important and favorable. But remember much depends on what particular drop of sputum is examined, and where it came from. Its character and content may vary from day to day, and may contain more or less bacilli. The disappearance of the bacilli from the sputum after repeated observation indicates that the disease is going on to arrest. And it is said that a tendency to

clumping is sometimes an unfavorable sign. Other symptoms of great importance are those connected with the digestive organs. A good appetite and digestion and regular action of the bowels are favorable. Diarrhœa in advanced cases is very unfavorable; it either implies tubercular alteration of the bowel or a lardaceous condition of its coats. And of course with digestion goes nutrition. Gradual loss of weight, say not more than 10 per cent. in a year, is much more favorable than rapid loss of weight. But there again, some of the most acute cases I have ever seen have been in very fat people. I remember two patients who came to my out-patient department at Mount Vernon Hospital, both women of enormous rotundity, who succumbed rapidly to acute phthisis. There was no sugar in the urine, they were not diabetic; but there was a family history of phthisis always taking an acute form.

Next we come to the patient's constitution, a phrase which there is nothing to replace. In all observations which have been made for insurance offices it has been clearly shown that a weight below the minimum average weight is always associated with great liability to early death from phthisis. It is an extremely unfavorable feature. If the weight is above the normal, the prospect is favorable. Now physique is also important, *i.e.*, the development of the chest, the absence of signs of past chest deformity from rickets, from nasal obstruction, from narrowing of the lower chest, flattening about the upper chest, prominent clavicles, these are all important in forming an estimate of the probability of the result when a person is attacked by phthisis. But even then one is sometimes greatly misled. Frequently one has seen greatly deformed chests which presented all the stigmata of enlarged tonsils and nasal obstruction, with spinal deformity, with even angular curvature and glandular affections in the neck, which have had phthisis and recovered from it, and eventually succumb comfortably to cerebral hæmorrhage. But those cases are special ones, and not at all the common experience. A history of a slight attack of phthisis in people who have had what was presumably some tubercular affection in childhood suggests that there is something like immunity produced by some forms of tuberculosis, although we should not build great hopes for the future as to immunity in phthisis as we should in regard to scarlet fever or smallpox; and no insurance office prefers a man who has once had phthisis.

Now we come to certain special features of the patient's constitution. Nervous irritability in a patient always means he will do badly; but the phlegmatic, quiet individual nearly always does well. The man who resists instructions nearly always does badly, and, as Dr. Kingston Fowler puts it, "No fool was ever

cured of phthisis." Certain racial peculiarities influence the forecast. I have under my care in a nursing home near by, a Greek gentleman, whom I was called to see at a large hotel in London, who was taken ill with acute phthisis in New York. There it was diagnosed as ptomaine poisoning. He was taken ill again on the liner, and it was diagnosed as enteritis, his attacks of fever being accompanied by acute indigestion, and some diarrhœa as the fever went down. He was taken ill again at Liverpool, the temperature on each occasion being 103 and falling, after three or four days in bed, to normal. On reaching his hotel in London he was again ill, and was transferred to a nursing home. There his state of panic and excitability has greatly interfered with his treatment. The man who gets excitement because his temperature goes up half a degree will probably find it up one and a half degrees next night. It is difficult to say why such cases should be less resistant. It may go with special conditions of metabolism, especially phosphate metabolism. Moreover, patients with a quiet temperament get a normal amount of sleep; whereas the excitable often have insomnia.

Now arises the question of the complications, and the results after treatment. There are complications arising from the infection by the bacillus itself, and there are complications arising from disease in other organs. Complications arising from tuberculosis elsewhere are always grave. Disease of the epiglottis is a little worse than disease of the vocal cord, owing to the dysphagia which is produced by extensive tuberculosis of the epiglottis. Tuberculosis of the pharynx is always unfavorable. The same is true of involvement of the bowels and genito-urinary organs, and naturally also the occurrence of tuberculous meningitis, which is a very common termination of adult tuberculosis, taking in them a very quiescent form, inducing coma. There may be some mental symptoms such as melancholia preceding it. Lardaceous disease also is a favorable complication. Then we have conditions which are not due to the bacillus, disease of the chest wall, such as pneumo-thorax, which, if double, is nearly always fatal. Severe and increasing dyspnœa from obstruction to the circulation or from destruction of the respiratory area, is always unfavorable. An increasing rapidity of pulse, failing, small, collapsing suddenly in a case which has been running an acutely pyrexial course, is always a dangerous symptom. Œdema of the extremities, from failure of the pulmonary circulation, or obstruction of circulation by damage to lung capillaries and failure of heart muscle from the toxæmia, is unfavorable. Diarrhœa is a common precursor of a fatal termination; so is violent, unrestrainable hæmorrhage in a late stage. Cases which begin with

hæmoptysis in people who have had robust health are amongst the most favorable we have. The hæmorrhage is not from destruction of tissue, but congestion hæmorrhage; in other words, the lung is holding an indignation meeting on the spot on account of the tubercle bacilli having made their appearance; there is such an acute reaction that a congestive condition results. Very careful examination will reveal, in such cases, a very small patch of diminished air entry and fibrosis. But recurrent hæmorrhages are unfavorable.

With regard to family history, if the patient comes of a family in which phthisis has been rapidly fatal, his phthisis is very likely to be fatal equally rapidly; if he comes of a family who have resisted the disease when it occurred, his case will probably run a chronic course. There is more in the natural immunity of the body than there is in infection in the case of phthisis. All statistics show that phthisis is a disease of poverty, over-crowding, dear food and low wages; it is not a disease which, like smallpox and scarlet fever, spreads irrespective of the depth of the pocket. Therefore pecuniary circumstances influence the prognosis. With regard to age, it is not so favorable in young persons as in people over 45. In women it is less favorable than in men. Pregnancy, on the whole, is a favorable feature; lactation is unfavorable. All women who show evidence of tuberculosis should have their babies hand-fed; they should not be allowed to nurse them. Our population receives much tuberculous milk from tuberculous cows, but the lactating human being ought not to be allowed to feed her young with her milk when she is tuberculous. Fortunately she does not bestow her milk on other members of the population. Twenty per cent. of the milk coming into London is tuberculous.

With regard to prognosis after treatment, I want to show you two brief tables indicating the difference in sanatorium treatment when tuberculin is used and when it is not used. I bring this before you because at the present time makers of drugs in the condensed tabloid-form are pushing these specific modes of treatment in a convenient form for administration, and unfortunately I have come across cases in which tuberculin has been given without a recognition of its great potency for evil. It must be given in carefully regulated doses. Tuberculin T.R. (tuberculin rest), or the remains of the bacillus after the extraction of the toxic substance, is attended by a higher percentage and a more lasting result than cases not so treated. I give you the figures from the Saranac Sanatorium, near New York. Trudeau's figures of cases which he watched for some years after discharge:

EARLY CASES.

	Without T.	C.T.
Five years after discharge.	%	%
Apparently cured	63	72
Arrested	26	21
Improved	7	5
Unimproved	1	2

ADVANCED CASES.

	Without T.	C.T.
Five years after discharge.	%	%
Apparently cured	13	28
Arrested	44	54
Improved	27	7
Unimproved	13	8

Therefore there is an advantage in most of the figures in getting a lasting cure with tuberculin. I now give you Ritter's figures, from the Hamburg Sanatorium, considered in a different way. They are taken three years after discharge, and are in full work at that time.

	Moderately Early advanced cases.	Advanced cases.
	%	%
Cases treated without T. ...	72	57
Cases treated with T.	95	82

On the other hand I cannot give you the figures, though I should like to do so, of the enormous number of cases which have been lighted up by the faulty administration of tuberculin. The temperature is by far the safest guide in attempting to administer tuberculin, and the patients should be kept at rest. In skilled hands you can say that the results from the use of tuberculin are better than without it, and the effect is more lasting. But again I would say, do not prognose hastily; the determining indication of the behavior of the case is obtained from watching it at rest and during exercise. That is the reason why sanatorium treatment is more successful than home treatment. In the former, the patient can be kept in order. But I think the place of the sanatorium with regard to treatment of tuberculosis is going to disappear; it is going to be a school which teaches healthy living; and as its object-lesson becomes known to the population, homes will be converted into sanatoria. I do not think it will be necessary to establish an enormous number of sanatoria in the country for the treatment of phthisis; the enhanced knowledge of healthy living will do so much for prevention that organized treatment will become less necessary.—*The Medical Press.*

LUXURIES AS REMEDIES IN CARDIAC DISEASES

BY MAX HERZ, M.D.

Of all so-called luxuries alcohol, above all, is indispensable at the bedside. Its use as an analeptic in cardiac cases has been unjustifiably neglected. There is no sense in giving a glass of heavy wine or the champagne that is so much prized, just as the strength is finally failing. In every case it must be determined whether the patient is one of the class that re-acts to very small quantities of alcohol, and especially with congestions and palpitation. Usually it will be proper to order a glass of light table wine to the patient confined to bed. In the case of young people, and especially females, a mild, sweet wine should be selected; where repugnance to it has to be overcome, plenty of sugar should be added, and the drink diluted with some aerated water.

Alcohol shows itself to be not only a momentary stimulant, but when the directions given are followed it acts for a longer period as a tonic. In this form it is an excellent vehicle for easily-digested foods. Stokes' mixture is known everywhere.

Almost always in the case of patients suffering from cardiac disease and where feeding is difficult, a good sweetened warm wine and water are taken without difficulty and for long periods. In the case of patients who have been accustomed to alcohol and are disturbed in the night by tormenting dyspnoea from permanent arterio-sclerosis brandy is more of a corrective of taste, or a flavoring material when the attempt is made to unpoison the system by a pure milk diet. By the addition of a moderate quantity of brandy the milk that is so much detested is made to some extent palatable. Experience has taught us that in all forms of arterio-sclerosis, also in angina pectoris, or stenocardiac troubles it may be given as a vascular remedy of great value, along with the bromine and the nitrites that quickly lose their effect.

Very frequently alcohol will perform extraordinarily good service in the treatment of mental disturbance. If the habits and inclinations of the patient are attended to it will not unfrequently happen that by a slight concession the state of the mind of the patient is considerably improved; it may have been that he has got the impression that every enjoyment in life is denied to him, or it may be that the remedy acts directly by the dilation of the vessels of the central nervous system giving rise to a feeling of well being.

As an hypnotic also in cardiac cases alcohol is to be preferred to many of the usual preparations. The form in which it is ad-

ministered, however, is not a matter of indifference. Mostly beer and, especially, from old prejudice, the darker kind made from more high roasted malt, is preferred to wine. The like holds good in regard to rum as compared with brandy. It may be suitably given in a weak infusion of tea, or with milk, or diluted with lemonade.

Black coffee will find an exactly similar field of employment, tea less frequently. Like camphor, it is an excellent cardiac tonic and analeptic, and especially in combination with digitalis it forms a diuretic.

In cases of pronounced muscular insufficiency it causes a feeling of palpitation far less frequently than with healthy or nervous hearts. For this reason it appears to be contra-indicated in cardiac neuroses, also when the pulse is very small, as it frequently is in the exacerbations that seem so threatening. The opposite of digitalis, which apparently slows the pulse through irritation of the vagus, coffee heightens the pulse rate. By preference it is used most in those cases of low cardiac activity, in which the action of the heart is slow or normal; it is to be avoided, on the other hand, in the presence of marked tachycardia or tachyarrhythmia. If a quick reviving effect is desirable, however, the combination with alcohol is useful, especially cognac.

Coffee seems to have the same action as diuretin on the symptoms of sclerosis of the coronary arteries. But it has this evil in common with that, in that it favors the development of extra systole. As this leads to short interruptions of consciousness in cerebral arterio-sclerosis it cannot be made use of in such cases. Moreover, it should not be given in the evening hours, as it will increase the wakefulness already often present. Its action is only desirable in those forms of degeneration of the cardiac muscles where the patient is in almost a continual doze, only starting up at times in distress as the difficulty of breathing becomes greater.

There is opportunity of employing tobacco as a cardiac remedy only in very rare cases. The situation occurs when a patient who is a smoker has been deprived of his tobacco. The attitude of the individual patient varies in such cases. Whilst with one a greater desire for food is manifest, which leads to a wished for increase in flesh, others, on the other hand, complain of unpleasantnesses on the side of the stomach and bowels, especially constipation, which usually has a bad effect on any heart mischief that may be present. Under such conditions a moderate quantity of tobacco may be permitted, but without

diminishing the pleasure by recommending the use of a milder kind instead of that the patient has been accustomed to. I have lately collected a good deal of information regarding the use of the so-called denicotinised tobaccos. A recently-invented process makes it possible to extract from 50 to 75 per cent. of the nicotine without any marked change of the flavor. This process may be carried out not only with raw tobacco but also in cigarettes and cigars already made. In this way a good deal of the poison may be removed from the tobacco consumed by the patient suffering from a cardiac mischief, and to whom the "weed" is a great solace. So denicotinised, he may be allowed the enjoyment of his favorite brand. We need not enlarge on the importance of this as regards the spirits of the patient. Denicotinisation is of importance also on other grounds to abstinent smokers. It happens not unfrequently that men who have been heavy smokers become singularly intolerant after a period of deprivation. Even the half of a cigarette may then cause palpitation, giddiness, or nausea, which may be erroneously set down to unfavorable progress of the cardiac affection. It is, therefore, easily understood that under such circumstances one may wish to produce the desired effect by small quantities of the denicotinised tobacco, just as in the case of morphinists during periods of withdrawal, one may prevent the breakdown by minute doses of the poison to which they have become slaves. Luxuries may largely take on the part of curative agents. This is an advantage, especially in the case of cardiac diseases, when the latter can be replaced by the former. In this way the heaping up of medicines that is often so burdensome may be avoided, material is brought to the organism for which it has an instinctive inclination, the effects of which are better known than those of any medicine that can be continued for years without doing mischief, and which are of inestimable value so much the more for the sick than for the healthy individual, inasmuch as by them a gleam of the sunshine of happiness, however pale it may be, is cast on to the sombre tints of everyday life.—*The Medical Press.*

DECEIVING THE INSANE

N. H. BEEMER, M.D.,

Medical Superintendent, Hospital for Insane, Mimico, Ont.

No one has so far satisfactorily explained the almost universal tendency on the part of friends and relatives to practise a cruel deception upon those who are mentally ill and for whom they are seeking admission to a hospital. Indeed, this deception is not practised by the friends and relatives only, but even the attending physician is often found doing the same thing, and there is reason to believe that he may be somewhat responsible for the major part of it.

Fear seems to be the foundation on which lying and deception rest, and the less courage an individual possesses, the more he feels the temptation to use misrepresentation; the greatest liar is commonly the greatest coward, though he may cunningly try to convince and deceive himself into believing that his deception is cleverness in overcoming, or consideration in saving his victims.

The insane are often improperly considered, both by the profession and laity, as a separate class of human beings, and it is often believed that the ordinary amenities of human relationship should be suspended in their management. Without considering the ethics of lying, no one will deny that lying to an insane person controverts the principle of fair play as much as hitting a man when he is down; an insane man's weapons of defence are badly damaged or destroyed, and still he is treated as though they were in good repair and his facility in the use of them equal to that of his assailant.

It is a common experience when a patient is admitted to the Hospital for Insane for him to relate that his intimate friends had advised him that he was only being taken away from home for the purpose of consulting an eminent specialist in reference to his illness, and that as soon as the important advice could be obtained he would be returned to his home. Sometimes it has been represented that he was merely starting on a vacation trip which had been arranged for him in order to provide the rest and recreation necessary for his restoration. At other times he has been made to understand that he was being conveyed to a sanitarium with all the amusements and attractions of a summer watering-place, and that his absence from home would partake largely of the nature of a holiday.

All the foregoing misrepresentations and many others of like character are frequently made by the friends, or relatives, or nurses, or physicians, apparently with the view of securing the

quiet removal of the patient from the home to the hospital, and these misrepresentations are made without the least consideration of the consequences to the patient. Instead of the eminent specialist or the attractive watering-place or the sumptuous sanitarium, the patient will find himself introduced to a hospital for the insane where physicians and nurses preside, and where there are locked doors, restrictions and discipline, and also hundreds of insane patients for companions. The patient will now feel that he has been tricked or trapped into the place by those who were his dearest friends, and that if they have deceived and deserted him, his prospects of returning home, when left in the hands of entire strangers, would not be promising.

The patient's loss of confidence in his quondam friends is at once transferred to the hospital physicians and nurses, and he naturally feels that if he cannot depend upon those whom he has known so long and so well, he will not be able to trust those who cannot be expected to have as much interest in him; and yet, the confidence and trust in the hospital physicians and nurses would be of the greatest importance to him. The agony and distress of this deception in many cases cannot be adequately depicted: to be suddenly separated from all that has made life worth living, including faith in one's friends, must mean the full measure of misery and discouragement.

How, then, it may be asked, shall a patient be quietly conveyed to the hospital if he is not to be deceived by this falsely styled "justifiable fiction"? The answer is to proceed in exactly the same way as would be followed in sending an ordinary patient to a general hospital.

The attending physician may explain to the patient that hospital treatment is necessary, and all the arrangements may be made quite openly and with the same frankness and interest that would attend the preparations for removal to a general hospital. There is no need of secrecy or mystery about the medical examinations by the physicians, and no need of concealment on the part of anyone of their purpose. Sometimes it may be advisable that the attending physician himself should accompany the patient to the hospital, or sometimes a friend outside the family, or some trustworthy person who may be an entire stranger to the patient, or even a constable who is trained in the quiet handling of people may be employed. Whoever may be selected for the service of conveying the patient to the hospital should clearly understand that the patient should not be deceived, and that lying to him would be practising a virtue about on a par with the bravery of a bully who would wantonly strike a defenceless blind man a blow in the face.—*Bulletin Ontario Hospitals for Insane.*

Editorials.

THE EHRLICH-HATA PREPARATION IN SYPHILIS

For the past few months medical literature, particularly that of European origin, has contained many references to the Ehrlich-Hata anti-syphilitic remedy, or, as it is commonly called "606." For years it has been Ehrlich's endeavor to prepare a compound which would have a destructive action on organisms of the spirochæte type, without causing any damage to the tissues of the host. Atoxyl, which was used in trypanosomiasis, was probably the best known of these preparations, in all of which organic arsenic was the basis. Unfortunately observers soon began to report cases of optic atrophy following the use of this remedy. Hata, in conjunction with Ehrlich, prepared the substance dioxy-diamido-arsenobenzol, and as 605 preparations had previously been experimented with, the new synthesis was called for short "606." Small quantities of this preparation have been distributed to various clinical centres, and it is said reports are to be received on 30,000 cases before the substance is given to the profession. Almost without exception favorable results have been reported. Cases refractory to mercurials and iodides have responded almost magically to the new drug. Two observers have reported cases of congenital syphilis being cured by the child nursing at the breast of its mother, who had received an injection of "606." Whether the "cures" will be permanent, particularly for the later nervous manifestations of the disease, we will be able to tell better ten years from now, but for the present, from a review of the literature, it would appear that Ehrlich had attained his goal and conferred a boon on mankind greater, perhaps, than medical science has ever done before.

MISTAKEN DIAGNOSES

In a very instructive paper in the *J. A. M. A.* (Oct. 15th), Cabot analyzes 1,000 autopsies and compares them with the

clinical findings, and his observations on the general result are most interesting. He finds, for instance, that they diagnosed mitral stenosis correctly in only 69% of cases and aortic stenosis in 61%. The errors in the latter condition lead him to the conclusion that aortic stenosis may exist despite the presence of an accentuated aortic second sound and a "water-hammer" pulse. In long-standing cases of "rheumatic" endocarditis, aortic stenosis is almost always present, whether there are physical signs or not. Aortic regurgitation was diagnosed correctly in 84% of the cases—a high percentage because the previous post-mortem experience has taught them to disregard diastolic murmurs unless there are vascular phenomena to correspond.

Chronic myocarditis, on the other hand, was accurately "guessed" in only 22% of cases, and Cabot thinks that the correct diagnosis is only a guess since there are no clinical symptoms and no physical signs constantly associated with this condition. Practically the same thing may be said of arteriosclerosis, in which, however, they were fortunate enough to estimate 60%. One-half the thoracic aneurisms were missed, sometimes because too great reliance was placed upon the X-ray findings. Five times there came the difficulty of deciding between aneurism and mediastinal tumor; in every case the autopsy showed aneurism.

In the respiratory system we find lobar pneumonia correctly diagnosed in 74% of cases and broncho-pneumonia in only 33%. It is always safe, when you have the signs of bronchitis, but the patient is too sick for simple bronchitis, to call it broncho-pneumonia.

Acute phthisis was correct in 59% and miliary tuberculosis in 52%. Cabot finds radiography of little use in early tuberculosis, agreeing in this respect with nearly all internists.

In the urinary system only 16% of the acute nephritis cases were diagnosed. It was overlooked entirely in 62%. But they were right in 74% of cases of chronic glomerular nephritis and 50% of chronic interstitial nephritis.

The other percentages of interest were: Cerebral hæmorrhage, 67%; cerebral tumor, 72%; septic meningitis, 64%;

tuberculous meningitis, 72%; gastric cancer, 72%; peptic ulcer (gastric or duodenal), 36%, and cirrhosis, 61%.

He sums up his conclusions as follows:

"1. Never make a diagnosis of uræmia in a patient seen for the first time in an acute illness characterized by coma or convulsions. Such diagnoses rarely turn out right.

"2. Never make a diagnosis of ptomaine poisoning without definite chemical evidence. General peritonitis or a tabetic crisis is usually the correct diagnosis.

"3. Make no diagnosis of hysteria, neurasthenia or psychoneurosis in a patient whose symptoms begin after the forty-fifth year. The actual diagnosis is likely to be arterio-sclerosis, hyperthyroidism, dementia paralytica, or pernicious anæmia.

"4. Diagnoses of tertian malaria in patients whose symptoms resist quinine more than three days are almost invariably wrong.

"5. Bronchial asthma beginning after 40 usually spells heart or kidney disease.

"6. Epilepsy beginning after 40 usually means dementia paralytica or cerebral arterio-sclerosis.

"7. Typical migraine is often a symptom of unrecognized brain tumor or chronic nephritis.

"8. Most cases of 'bronchitis' mean tuberculosis, bronchopneumonia or multiple bronchiectasis cavities.

"9. Aside from the immediate results of acute infections (such as scarlet fever, diphtheria, tonsillitis and pneumonia) 'acute' nephritis usually turns out to be chronic.

"10. Acute gastritis and gastralgia usually mean appendicitis, gall-stones or peptic ulcer.

"11. Pus in or near the liver is often mistaken for serous or purulent pleurisy, for it produces identical signs in the right chest posteriorly.

"12. An X-ray of the shin-bones may give the first hint of an active syphilitic process in the joints or internal viscera."

THE CRIPPEN TRIAL

One of the most interesting articles respecting this celebrated trial appeared in the *London Times*. The writer expresses the

opinion that it has shown as no other trial before did that in the struggle of law against crime justice is now armed with new and formidable weapons, without any special reference to dramatic incidents connected with wireless telegraphy in mid-ocean, nor to the fact that criminals now find that the world is virtually smaller than it was. He has chiefly in mind the medical and surgical evidence. No one can study it without being convinced that forensic medicine and kindred branches of knowledge have made great advances. Compare the evidence of the experts as to hyoscine tests, of its presence and its action, with that of the experts in another famous case of poisoning—Palmer's case—and it will be seen that prodigious strides have been made. The trial will be memorable too for another reason. The man who had committed one of the vilest of murders and cruelly mutilated the body of his wife was popular, and to all who knew him he seemed genial and kindly. The callousness which he showed after he had committed the murder was great, but more marvelous was the calm which he maintained throughout the trial, the demeanor of innocence so counterfeited as to deceive any one who forgot the evidence, and the imperturbability with which he stood cross-examination and sought to support one falsehood by another. The story disclosed in this trial reveals possibilities in human nature of superficial geniality combined with absolute callousness, a kindliness of disposition coupled with an incapacity for pity which the annals of crime have not often equalled.

MEDICAL EXPERT EVIDENCE

It is generally understood that the so-called medical expert evidence given in our courts is often exceedingly unsatisfactory and occasionally discreditable to the profession.

The British Medical Journal in a short article on the subject refers to various incidents in the life of the late Sir Robert Christison, for some time Professor of Materia Medica in the University of Edinburgh, as described in his autobiography, edited by his sons and published by the Blackwoods. It is fairly

well known in Canada that Sir Robert for some time acted as "unacknowledged standing medical counsel for His Majesty's interest," and in that capacity always took care to look at both sides of the question.

He relates one case which is interesting and rather amusing in a trial for poisoning with arsenic. Dr. — was employed to make a muddle of the professional testimony, and this was how he set about it: He said he had great experience of diseases and in pathological dissections. There was nothing in the symptoms of the deceased during her life nor in the appearances of the dead body, which he had not seen twenty times as arising from natural causes. "But Dr. —," said the Lord Advocate, "the symptoms which you have here detailed, and which you say may have arisen from natural diseases, are also such as arsenic may produce. Are they not?" "They may all be produced by natural diseases." "So you have already told us. But may they not also be produced by arsenic?" "They may, but natural diseases may equally cause them." "You need not repeat that information, Doctor. Give me a simple answer to my simple question. May these symptoms be produced by arsenic? Yes or no?" "Yes." "Now, Dr. —, you have also told us that the appearances found after death were such as natural disease may produce. Are they not also such as may be produced by arsenic?" "Natural causes may account for them all," etc., through the same round of fencing until he was compelled to admit that arsenic would produce them. "Now, Dr. —," continued the Lord Advocate, "you have the evidence—the arsenic having been found in the stomach, are you satisfied that arsenic was discovered there?" "My Lord, I am no judge of chemical evidence." "Then, Dr. —, in that case I must tell you that it will be my duty to represent to the jury and judges that arsenic was unequivocally detected, and I ask you this: Suppose arsenic was detected, what, in that case, do you think was the cause of these symptoms and of these signs in the dead body?" "Natural disease might cause them all." "Yes! Yes! We all know that. But suppose that arsenic was found in the stomach what then would be your opinion as to their cause." A

pause on the part of the Doctor—now run to earth. “Do you not think, Sir, that in that case arsenic was the cause?” Softly and reluctantly came the inevitable answer, “Yes.” “One more question then and I have done. In your opinion did this person “die of poisoning with arsenic?” “Yes.” “Have you any doubt of it?” “No.” Then, sotto voce (audibly enough), “What the devil brought you here?”

THE LABORATORY OF THE HEALTH DEPARTMENT OF TORONTO

The City of Toronto and its M. H. O., Dr. Hastings, appear to have been particularly fortunate in their selection of a man to take charge of the laboratory. Dr. George G. Nasmith has been appointed Director of the Laboratory of the Health Department. Dr. Nasmith was born in Toronto 32 years ago and received his preliminary education at the Jarvis Street Collegiate Institute. He graduated B.A. from the University of Toronto in 1900. After graduating he specialized in natural science and became Doctor of Philosophy in 1903. He was for about eight years first assistant in the Provincial Laboratory. Dr. John A. Amyot, the Director of the Laboratory, has a high opinion of the attainments of Dr. Nasmith. He believes the city might canvass the whole Dominion and not secure a better man for the position. Dr. Nasmith was the first assistant appointed to the Provincial Laboratory, and he has shown himself a first class research man. His special work has been chemistry, but in recent years he has perfected himself in bacteriology.

LEPROSY

Fortunately we have in Canada but little of that terribly loathsome disease leprosy. The history of the colony afflicted with leprosy in New Brunswick is interesting. There is no certainty where the disease came from, but there is a tradition to the effect that about ninety years ago two afflicted sailors ship-

wrecked on the Gulf shore were taken in and cared for by the hospitable inhabitants of the district. For some years after they left there was no sign of any ill-effect from their visit. Two generations afterwards, however, the disease attacked the descendants of those who had cared for the unclean lepers. After the disease had existed for some time the Government took definite action in the interests of the unfortunates. About fifty years ago the Lazaretto was instituted in the town of Tracadie, where the patients were placed and cared for under the superintendency of a physician. This institution, as is well known, is in existence, but it is believed that the disease is gradually being stamped out.

There is no more magnificent and heroic work done in Canada than that of the devoted women who have given up their lives on behalf of the lepers. Sixteen nuns of the Sisters of Providence Order live in the pest house and minister to the victims. They do all the work of the establishment and actually dress the sores which cover the majority of the sufferers. They apparently have no fear of contagion, in spite of the fact that many of their predecessors have died of the disease, which has been called tubercular leprosy. We understand that there are at the present time about twenty patients in the Lazaretto.

THE ONTARIO MEDICAL COUNCIL

Considering all the circumstances in connection with the last sessions of the Council, it is somewhat remarkable that there will be contests in only four divisions for the present election of members. Since the creation of a new constituency in the Sault neighborhood there are 18 divisions, and in 14 of these members are elected by acclamation. Of these the following ten were members of the Council: Dr. J. McArthur, London; Dr. T. W. Varden, Galt; Dr. H. S. Griffin, Hamilton; Dr. W. R. Merritt, St. Catharines; Dr. R. J. Gibson, Sault Ste. Marie; Dr. J. S. Hart, West Toronto; Dr. Horace Bascom, Uxbridge; Dr. W. Spankie, Wolfe Island; Dr. J. Lane, Mallorytown, and Dr. M. O. Klotz, Ottawa.

In Division No. 1 Dr. G. R. Cruickshank, of Windsor, takes the place of Dr. Hoare, Walkerville, resigned. Dr. A. B. Welford, Woodstock, takes the place of Dr. J. A. Cormack, St. Thomas, resigned. Dr. A. D. Stewart, Fort William, is the member for the new constituency, and Dr. T. W. G. Young, Peterborough, takes the place of Dr. S. C. Hillier, resigned.

In Division 4 Dr. J. A. Robertson, Stratford, is opposed by Dr. A. T. Emmerson, Goderich.

In East Toronto Dr. E. E. King is opposed by Dr. Cassidy.

In Division 6 Dr. J. Henry is opposed by Dr. Frank Porter, Waubashene.

In Division 14 Dr. A. E. MacColl, Belleville, is opposed by Dr. T. S. Farncomb, Trenton.

THE CONGRESS OF OBSTETRICS AND GYNAECOLOGY

The Tenth International Congress of Obstetrics and Gynaecology was held at St. Petersburg from Sept. 22 to 28. The attendance was fairly good, but not as large as was expected. The business was admirably conducted, the discussions were excellent, and the treatment of the visitors was exceedingly hospitable. Besides the ordinary discussions in Congress, additional opportunities were given to the outsiders for visiting the various hospitals and clinics, which are numerous, well equipped, and ably conducted. There are in the city 15 lying-in hospitals, containing altogether 347 beds, in which during last year there were 19,347 patients admitted and treated.

In many of these hospitals private patients can enter on payment of arranged amounts. The payment of 15 roubles (about \$10.50) includes the whole attendance during a stay of ten days, or smaller sums are charged according to the circumstances of the patient. Thus it happens that over forty per cent. of all the confinements in St. Petersburg take place in the municipal maternities. The *British Medical Journal*, in commenting on this fact, says its advantage cannot be over-estimated, since all means are given for the safety of the patient—the best medical skill, most careful nursing, strictest aseptic arrangements, all combined with attention to the convenience and comfort of the recipients.

CREMATION

We are told from time to time that disposal of the bodies of the dead by cremation is making steady progress, especially in Great Britain, the United States, Germany and South America. In looking over the literature on the subject one finds many favorable opinions expressed in very methodic and sometimes rather unique form.

At the opening of the Birmingham Crematory in 1903 Bishop Gore said: "What I should desire when I myself die is that my body be reduced rapidly to ashes, so that it may do no harm to the living, and thus in accordance to the Christian feeling be laid in the earth—earth to earth, ashes to ashes, dust to dust—with the rites of the church. I do not see that there is any serious Christian argument against such a practice, and from a sanitary point of view it has numerous advantages."

With reference to any sentimental objection, the *British Medical Journal* expresses the view that, although the sudden reduction of the body of a loved one to a handful of ashes is at first something of a shock, still it should be easy to convince thinking persons that cremation is far less horrible than burial. Cremation does in an hour what the natural process of decomposition may take years to accomplish. Tender memory of the dead is more likely to be maintained by the thought that there is no foulness nor corruption, but only a small quantity of inoffensive ashes where the remains are buried.

Guy de Maupassant wrote an account of the cremation of an Indian Prince which appeared in the *Paris Figaro* in 1884. After describing the scene, he says: "I have therefore seen a man burned on a funeral pyre, and that has given me the desire to disappear in the same manner. In this way everything is finished at once, man hastens the sole work of nature instead of retarding it by the hideous coffin in which he rots for months; the flesh is dead, his spirit has fled, the fire that purifies disperses in a few hours that which was a human body and throws it to the wind. It makes of it air and ash instead of loathsome corruption. It is clean and wholesome. Putrefaction underground

in that closed box wherein the body changes into a black and stinking pulp is repulsive and abominable."

The following clause is taken from the will of the late Mr. W. P. Frith, R.A.: "Believing that the duty of the individual to his kind includes providing for such final disposal of his body as is sure to be least detrimental to those who survive him, and believing that the modern process of incineration provides the cleanest and safest mode of such disposal, I hereby solemnly express to my survivors exactly my earnest desire and request that on my decease my body shall be cremated at such convenient place as shall furnish the proper facilities."

Notwithstanding all that has been said, however, in favor of cremation of the bodies of the dead, the sentiment against the process is still almost overwhelming in all parts of the civilized world.

Notes

VACANCY ON HOUSE STAFF AT MUSKOKA FREE HOSPITAL FOR CONSUMPTIVES, GRAVENHURST

Experience and training in the early diagnosis of tuberculosis, in chest, nose and throat work, and complications. Opportunities, if desired, for laboratory work. Two hundred patients in these two institutions. Total resident staff of six physicians. Comfortable quarters in new and separate Administration Building. Six or twelve months' term. Apply Dr. W. B. Kendall, Physician-in-Chief.

The American Public Health Association will hold its 1911 meeting in Havana, Cuba, from December 4 to 9. The prospect of having the Association again in Havana has aroused the warmest interest among the physicians there, the Secretary of Sanitation, Dr. Varona, being particularly interested. The Academy of Medicine has offered its building for the general section meetings. The Hotel Sevilla will be the headquarters of the Association. A few years ago a meeting in Havana would probably have discussed yellow fever. The changed situation in Cuba with respect to that disease is shown by the fact that yellow fever has been so completely extinguished on the island that the local physicians desire rather that tuberculosis be given the most prominent place. The question of the milk supply will also be considered.

It is hoped at this meeting that the recently organized Sociological Section, and the Section on Sanitary Engineering, which was tentatively authorized by the Milwaukee meeting, may be put upon substantial foundations.

ACCIDENT TO DR. HARVEY

The many friends of Dr. A. R. Harvey, of Orillia, felt the deepest regret when they heard that he had met with a very serious accident far back in the woods of Longford Township, about 40 miles north of Orillia, Nov. 5. The doctor was mistaken for a deer by a guide and shot through the left arm and forearm. We are told that one of the bones of the forearm was

fractured and the ulnar artery injured. The doctor immediately bound up his arm in such a way as to check the hæmorrhage. Fortunately Dr. N. A. Powell, of Toronto, was in the party and at once took charge of Dr. Harvey. He placed him in a canoe and paddled him twelve miles through a chain of lakes to meet motor cars sent from Orillia. The other doctors of the Red Tan Hunt Club who were present cleared the trails and carried the canoe over the portages in the gentlest manner possible. Dr. Arthur Ardagh walked fourteen miles by night through the bush to the nearest settlement and then drove seventeen miles to Washago to reach a telephone, and Dr. Gilchrist coming from an adjoining camp gave valuable help on the trip out. We are pleased to say that at last accounts Dr. Harvey was doing well.

SMITH'S FALLS HOSPITAL

The corner-stone of the new Public Hospital for Smith's Falls, Ont., was laid October 2nd. The building will have a frontage of 76 feet with a depth of 131 feet. Milton pressed brick will be used in the construction. There will be three storeys, and it is expected the hospital will accommodate about fifty patients and the cost will be about \$30,000. The beautiful four-acre lot upon which the building will stand was the gift of Mrs. M. E. Chambers. It is hoped the building will be completed early next summer. The institution will be known as the Chambers Memorial Hospital.

Personals

Dr. Jas. S. Simpson has commenced practice at 112 Avenue Road.

Dr. W. Blake Gibb of Toronto has returned from Vienna, where he has been engaged in special work.

Dr. H. Glendenning has moved to 258 Wellesley Street, the residence lately occupied by Dr. C. J. Hastings.

Dr. Edmund Boyd, Toronto, was successful in passing his examination for membership of the Royal College of Surgeons in October.

Dr. Frederick C. Harrison, Toronto, has returned from England and commenced practice at 134 Bloor Street West, with an office also at 643 Ontario Street.

Dr. M. M. Farnham of Copper Cliff is to be an associate coroner for the District of Nipissing, and Dr. W. R. Patterson of Sudbury is to be an associate coroner for the District of Nipissing.

Dr. H. E. Heyd was elected President of the American Association of Obstetricians and Gynæcologists at its 23rd annual meeting, recently held at Syracuse. We present our congratulations. Dr. Heyd is a Canadian well known to many physicians, especially in Brantford and Toronto.

We are pleased to announce that Dr. Frederick Winnett, of Toronto, has quite recovered from his attack of typhoid fever during his stay at Aldershot, England. He went over to England with the Q. O. R. Battalion, and with a number of his fellow officers became ill soon after their arrival in England. It is supposed they were poisoned by germs in clams which they ate on shipboard.

Obituary

LEONARD LUTON, M.D.

Dr. Luton, of St. Thomas, died at his residence in that city Nov. 1st, aged 75. He was one of the Homœopathic members of the Ontario Medical Council from 1890 to the time of his death, and was president of that body in 1898.

WILLIAM C. GILDAY, M.B.

Dr. W. C. Gilday, 7 Moss Park Place, Toronto, died of suppurative endocarditis, after an illness of seven weeks, October 18, aged 28. He graduated M.B. from the University of Toronto in 1905. He then spent two years in St. Michael's Hospital, after which he spent three years in London and Birmingham, England, where he took special courses in diseases of the eye, ear, throat and nose. He had just commenced practice in his specialty when his illness began.

EDMUND HENRY DILLABOUGH

Dr. Edmund Henry Dillabough, of Hamilton, died October 25th, aged 76.

Book Reviews

Radium Therapy. By DR. LOUIS WICKHAM and DR. DEGRAIS, translated by S. ERNEST DORE, M.A., M.D., M.R.C.P., with an introduction by SIR MALCOLM MORRIS, K.C.V.O. Illustrated, with figures and colored plates in the text. 306 pages. 1910. Price, \$4.50. London: Cassell & Co. Toronto: D. T. McAinsh & Co.

Coming from the pen of the man who is the recognized authority on the subject of radium therapy, and who has, by his researches, placed radium in the front rank of modern therapeutic agents, such a work demands the close study of everyone who regards himself as a modern physician or surgeon.

Following a short introductory chapter, in which Dr. Wickham tells us how he first took up the study of radium, and of the founding of the Radium Institute in Paris, the rest of the book is divided into three parts. In the first part the physics of this scientific curiosity are discussed, and in a way that will appeal to layman and physicist alike. The methods of extraction, the properties, physical and chemical, and the composition and nature of the radiations and emanation given off by radium are taken up, and the reader will be sure to find many erroneous ideas corrected by the time he has reached the end of this section.

The second part deals with the use of instruments for applying the agent to the many and varied pathological conditions in which it can be employed, and it is interesting to see the ingenious contrivances, to which resort has been had in many cases. Here we find the method of "cross-fire" discussed, by which a regular bombardment of the tissues may be carried out by placing a piece of apparatus on each side of the tissues requiring treatment, and also the use of screens, by which the rays may be filtered and the particular ones, adapted to the case in question, may be selected.

In part three, which forms by far the larger part of the book, and which will be found of the greatest interest to the clinician, the therapeutics of radium are discussed under eight headings, viz.: (1) carcinomata and other malignant growths; (2) cheloids and disfiguring scars; (3) angiomas; (4) pigmentary naevi; (5) muco-cutaneous tuberculosis; (6) analgesic action in pruritus, neuralgia, etc.; (7) various diseases; (8) gynaecology. This section is well illustrated with some beautifully prepared colored plates, which convey, even better than the text, the marvelous

results which have been obtained. It is plain that in the treatment of cheloid, vascular nævi and superficial epitheliomata, no other agent can for one minute be compared with radium. But, according to the authors, we are to look for even greater results, and certainly from the few cases they report of visceral malignant tumors, the future has much in store. The hope of Dr. Wickham is that by a proper association of surgery and radium therapy many serious visceral neoplasms may be treated with success. Surgery must devise new methods by which instruments containing radium may be applied "to the treatment of any particular carcinoma, according to its position, extent and gravity." In this way we will be able to treat growths of the bladder, uterus, œsophagus, stomach, etc.

And yet, while the authors are most optimistic, they are still truly scientific in their view of the subject, and therefore very conservative. They are not in any way associated with or responsible for the exaggerated statements which have come from other sources. Radium should only be used in such cases after the fullest consideration "lest patients should be deprived of other methods of treatment, which may sometimes be of greater value."

To anyone desirous of obtaining a thorough grasp of the present position of radium in therapeutics, we can thoroughly recommend this work. The translator has done his work well, and has given us a most readable book. It is a fascinating subject in which one could possibly pardon an author for indulging in some flights of fancy. But such is not the case here. The scientific spirit pervades the whole book, and as an example of what scientific medicine should be we commend it.

F. C. H.

A Manual of Chemistry. By ARTHUR P. LUFF, F.R.C.P., Physician to St. Mary's Hospital and Joint Lecturer on Medicine at St. Mary's Hospital Medical School, and HUGH C. H. CANDY, F.I.C., Lecturer on Chemistry in the London Hospital Medical College. New and enlarged edition, illustrated. 622 pages. 1910. Price \$2.25. London: Cassell & Co. Toronto: D. T. McAinsh & Co.

Chemistry is every day playing a larger part in modern medicine, and the present fourth edition of this manual recognizes the importance of an intimate knowledge with chemical laws and facts on the part of the present day student. It presents the essentials of the science, and particularly their relation

to medicine, showing the practical bearing of the subjects discussed. At a time when there is a danger of turning out graduates, who are greatly lacking in the clinical application of the sciences, such a book is very welcome.

The subject is discussed in six sections. Part I deals with the laws and underlying principles of chemistry. Parts II and III take up inorganic chemistry, while Part IV is occupied with organic chemistry. In Part V, arithmetical chemistry is taken up, while Part VI treats of chemical analysis. As the name implies it is essentially a beginner's book, and as such can be recommended to a place on every student's bookshelf.

Some Considerations of Medical Education. By S. SQUIRE SPRIGGE, M.A., M.D. Cantab. London: Bailliere, Tindall & Cox. 1910.

That the problem of medical education in Great Britain is one demanding serious consideration is apparent to anyone reading this interesting little book. "The old order changeth, yielding place to new," but sometimes it takes a long time to do it. To medical educationists the material collected here will be of great interest, while to the prospective post-graduate student it should be invaluable as giving him a complete insight into the system of medical education in Great Britain.

A Text-Book of Mental Diseases. By EUGENIO TANZI, Professor of Psychiatry in the Institute of Higher Studies of Florence. Authorized translation from the Italian by W. Ford Robertson, M.D., C.M., Pathologist to the Scottish Asylums, Edinburgh, and T. C. Mackenzie, M.D., F.R.C.P., Medical Superintendent Inverness District Asylum. New York: Rebman Company, 1123 Broadway. Cloth, \$7.50.

This work and the one following from the press of the Rebman Company are of such a high degree of merit that Canadian readers may well be surprised when they begin to realize the perfection which has been attained in Italian medicine. Although the average English-speaking physician is not aware of it, the Italians are well up in the front ranks of psychiatry, as this volume amply demonstrates. Seldom have we come across a translation so well done. The whole book reads like a novel. This is a work which every general practitioner will find of the utmost value.

Clinical Commentaries Deduced from the Morphology of the Human Body. By PROFESSOR ACHILLE DE-GIOVANNI, Director of the General Medical Clinic, University of Padua. Translated from the second Italian edition by John Joseph Eyre, M.R.C.P., L.R.C.P.S.I., D.P.H. New York: Rebman Company, 1123 Broadway.

This book seeks to present the study of disease in a new way, based on the morphology of the human body. The author has many new and interesting facts which the translator has turned into readable English. There is a great deal of food for reflection contained between these covers, perhaps not all of it in accord with our orthodox ideas, but it is all the better for that.

The Diseases of Women. A Handbook for Students and Practitioners. By J. BLAND-SUTTON, F.R.C.S. (Eng.), Surgeon to the Middlesex Hospital, and Senior Surgeon to the Chelsea Hospital for Women; and ARTHUR E. GILES, M.D., B.Sc. (Lond.), F.R.C.S. (Edin.), Surgeon to the Chelsea Hospital for Women, and Gynæcologist to the Tottenham Hospital. Sixth Edition, with 123 illustrations. New York: Rebman Company, 1123 Broadway.

This useful manual contains many additions in this, the sixth edition. There is a new chapter on Injuries of the Uterus, which shows the dangers which may follow on a very minor operation. The questions of fibrosis uteri and adenomatous disease, to both of which subjects Bland-Sutton has devoted much study, are well taken up. There is a special chapter on the appendix as a pelvic organ. The text is clear and concise and the book in every way fulfills the purpose for which it was written.

The Essentials of Histology, Descriptive and Practical. For the use of Students. By EDWARD A. SCHAFER, F.R.S., Professor of Physiology in the University of Edinburgh. New (8th) edition, thoroughly revised. Octavo, 571 pages, with 645 illustrations. Cloth, \$3.50, net. Lea & Febiger, Publishers, Philadelphia and New York, 1910.

The eighth edition of this well-known text-book will be well received by teacher and student alike. It is in our opinion the best work of its kind extant, and the fact that it has come through so many editions shows that this opinion must be shared by others. The subject is covered in fifty chapters, each suitable for a convenient amount of class work. Points in technique are explained fully, so that the book may be used as a laboratory manual. The illustrations are numerous and very clear as to the

points to be emphasized, and are in both black and colors. There is no doubt that this edition will prove as popular as its predecessors among the students of this subject.

Pathogenic Micro-organisms, including Bacteria and Protozoa.

A Practical Manual for Students, Physicians and Health Officers. By William H. Park, M.D., Professor of Bacteriology and Hygiene in the University and Bellevue Hospital Medical College, and Director of the Research Laboratory, Department of Health, New York City; and ANNA W. WILLIAMS, M.D., Assistant Director of the Research Laboratory. New (fourth) edition, thoroughly revised. Octavo, 670 pages, with 196 illustrations and 8 full-page plates. Cloth, \$3.75, net. Lea & Febiger, Publishers, Philadelphia and New York, 1910.

Since the last edition of this popular work many facts have been added to our knowledge of a great number of the micro-organisms and protozoa. The subject of bovine tuberculosis and its relation to the human type of disease, the great advance made in the preparation of many of the vaccines and sera, such as, for instance, the antimeningococcic serum, and the recent work on the ætiology of infantile paralysis, are all discussed in this new edition. The prophylaxis and cure of trypanosomiasis and the work on trachoma are also taken up. Chapters have been included dealing with the micro-organisms concerned in agriculture and in some of the important fermentations.

It is a book which appeals to student, practitioner or laboratory worker alike, and will give the reader a thorough grasp of this most important branch of modern medicine.

Hand-Book of Obstetrics. By R. CADWALLADER, A.M., M.D., Assistant in Obstetrics, University of California, Medical Department, San Francisco, Cal. With 104 illustrations in the text. Philadelphia: F. A. Davis Company, Publishers, 1908.

The author of this small Hand-Book of Obstetrics has endeavored to condense into a small volume the essential facts of obstetrics. The illustrations are practically all taken from the works of Graudin and Jarman, Edgar, Gilliam and a few other authors, full credit being given in each instance.

Selections

The Physiological Activity of Many Products of Regressive Metamorphosis and Their Role in Pathology

An article on this subject appears in the *Nowoe Medizinsje*, 6-10, by Dr. F. M. Lifschitz. The writer's attention has been chiefly directed to the influence of these products on the blood pressure. Alloxan increases the blood pressure, slows the pulse, and increases its amplitude. This appears to take place through the action of the substance on the vasomotors, as well as on the centre for the vagus nerve. Paraban acid also increases the blood pressure and the amplitude of the pulse. This substance appears to act on the muscles of the heart, on the vasomotor centres of the medulla oblongata, and the centre for the vagus. Guanidid and ammonium carbamate increase the blood pressure by their action on the vasomotor centres and the blood vessels. Indol, skatol, phenylacetate, phenyllpropionic acid have only a slight and passing influence on the blood pressure. Acetone bodies have a lowering effect on the blood pressure, slightly accelerate the pulse, and increase its amplitude, depending on the depressing influence of these substances on the vasomotor centre in the medulla oblongata and the centre for the vagus. Oxybutyric acid (neutralized by soda, and given by the mouth) caused increase of blood pressure, slowing of the pulse, and sometimes increase of its amplitude. Lecithin caused increase of blood pressure, principally in animals that had been rendered anæmic by loss of blood (venesection). Lecithin is apparently useful in the animal organism, especially where it has become weakened by illness. The split products of lecithin, glycerophosphoric acid and trymethalmine exert a marked influence in raising blood pressure.

Although some of these products have not yet been found in the test-tube, they are in all probability present in the animal system. The most recent investigations into physiological chemistry support this view, as some nitrogenous substances have been found in the organism that were previously unknown. The study of these substances is of great importance from a practical point of view. Possibly further research will throw light on the pathogenesis of some of the functional neuroses.—*The Medical Press*.

The Treatment of Convulsions. C. H. Chapin, M.D.,
Leucocyte.

The child is placed upon a table or upon some one's lap in such a manner that a number of measures can be simultaneously carried out. Some cracked ice is called for, placed in a handkerchief or other thin material, and spread over the occiput and vertex in such a manner as rapidly to cool the brain. If ice is not available, cold compresses wrung out of water at the lowest temperature that can be procured may be employed. The feet and legs are at the same time plunged in a pail containing hot water to which one or two tablespoonfuls of mustard has been added. Caution must here be exercised, as in the confusion the water may be too hot. The writer has obtained practically the same results by the use of this partial bath as by complete submersion, and a simultaneous use of other measures is thus made possible. The bowel is at once washed out, using any available apparatus. In a large number of cases this is followed by the expulsion of undigested masses, and the convulsion ceases. The two drugs which the author has found most serviceable are the bromides and chloral hydrate. Young infants are very tolerant of the drug, and from 3 to 5 grains may be given at once and given every ten minutes, care being taken that the solution is actually swallowed. To be sure of this last point, it is well to depress the tongue with a spoon when the remedy is given so that the fluid may reach the pharyngeal muscles and thus be carried to the stomach. If the convulsions do not cease, the use of chloral hydrate will be found more powerful. From 3 to 5 grains dissolved in half an ounce of water is passed into the rectum, and retained there until absorption. For intractable cases a few whiffs of chloroform may be employed from time to time to check the excessive severity of the convulsion.—*American Medicine.*

Poliomyelitis

H. E. Robertson and A. J. Chesley (*J. A. M. A.*) report six cases with autopsy. From these they conclude: "1. Acute anterior poliomyelitis is a specific infectious disease characterized pathologically by general toxæmia affecting the parenchyma of the heart, liver and kidneys and the lymphoid tissues of the body, but spending itself locally on the structures of the spinal cord. 2. Grossly the cord is congested, and on transverse section shows softening and often hæmorrhages in the grey matter of the

anterior horns. 3. In the cord the infectious agent is located in the perivascular lymph channels of the anterior portions, especially invading the grey matter, but extending to the white matter and pia and occasionally the posterior horns. The brain stem and nasal ganglia may be involved. In the cord the medulla and cervical and lumbar swellings are particularly affected. 4. The characteristic lesion consists of collections of cells in the perivascular and pial lymph channels and tissue spaces of the anterior horns. Of these cells the polymorphonuclear leucocytes appear early and are relatively few in number. They are soon displaced by endothelial cells arising from proliferation of the lining endothelium and lymphocytes coming from the blood and lymph streams. 5. Edema of the interstitial tissue and degeneration and destruction of the ganglion cells are always present. 6. The vessels are congested, their walls degenerated, and the capillary branches in the grey matter irregularly distended and often ruptured, giving rise to hæmorrhages, which always intensify markedly the amount of destruction. Thrombosis was not observed. 7. Early degeneration of nerve fibres from the anterior roots is a constant feature. 8. Stains for micro-organisms were uniformly negative."—*Medical Record*.

Camphora Monobromata

For subcutaneous use Cassin and Girard recommend the use of a 10 per cent. solution of monobromated camphor in olive oil, previously purified in the well-known way by means of alcohol. This solution may be put up in ampoules containing 1 c.c., and is easily sterilized; the injections are quite painless and harmless. The authors used subcutaneous injections with excellent results in psychic excitability occurring during typhoid fever, in psychic disturbances following menorrhagia, in syphilitic encephalopathy and in obstinate and painful contractions of the muscles of the neck, and in a case of paralysis agitans. They also give good results in obstinate hyperemesis gravidarum when used alternately with physiological serum.—*Merck's Report*.

Miscellaneous

The Hypodermatic Tablet as an Emergency Agent

If there is one class of therapeutic agents which more than another should be chosen with discretion and judgment, the hypodermatic tablet represents that class. When he administers a preparation hypodermatically the physician wants prompt action, and he wants to be certain that he is going to get it. To have that assurance he must use a tablet that is active, that has definite strength, that dissolves promptly and wholly. Cheap tablets, poorly made tablets, tablets concerning which there is the slightest doubt as to medicinal quality, may well be left alone. And there is no need to err in the matter of selection. Hypodermatic tablets of the better sort are easily obtainable. Perhaps the brand which comes readily to mind is the brand which is exploited so extensively to physicians under the familiar caption of "Five Seconds by the Watch." The makers, it is hardly necessary to add, are Messrs. Parke, Davis & Co., who guarantee their hypodermatic tablets unequivocally as to purity, solubility, activity and stability.

An Unconventional Cough Syrup

There are "cough syrups" without end. Some of them, it is needless to say, have little or no therapeutic value. Conversely, there are some that no physician need hesitate to prescribe. One of these—Syrup Cocillana Compound (P., D. & Co.)—is so exceptional in many particulars as to be worthy of special mention just now, when coughs are so plentifully in evidence. By its name no one would recognize it as a preparation for "coughs" and "colds," and this, in connection with its general efficiency, constitutes one of its chief claims to distinction. It is a product which the layman knows nothing about. It does not encourage counter-prescription or self-medication. It was designed especially with reference to the needs of the prescriptionist.

The formula of Syrup Cocillana Compound, which, of course, is plainly printed on the label, is quite unusual. Let us briefly consider its components: *Euphorbia pilulifera*—serviceable in the treatment of chronic bronchitis and emphysema; wild lettuce—a mild and harmless narcotic, useful in spasmodic and irritable coughs; cocillana—valuable expectorant, tonic and laxative, ex-

erts an influence on the respiratory organs similar to that of ipecac; syrup squill compound—serviceable in subacute or chronic bronchitis, as an expectorant, and as an emetic in croup; cascarrine—the bitter glucoside of cascara sagrada, useful for its laxative action; heroin hydrochloride—a derivative of morphine and extensively prescribed in the treatment of cough, especially of bronchial origin; menthol—stimulant, refrigerant, carminative and antiseptic, serviceable in coughs of pharyngeal origin.

Syrup Cocillana Compound would seem to be worthy of extensive prescription.

Pope said,

“The learn’d reflect on what before they knew.”

As the winter approaches, conditions prevalent with the season will present themselves for the consideration of the physician.

At this time it might be well to recall that Antiphlogistine, applied thick and hot, will offer immeasurable relief in those cases of bronchitis, tonsillitis, laryngitis, pleurisy and other throat and chest affections you will be called upon to treat.

Satisfactory therapeutic results invariably follow the application of Antiphlogistine, and to guard against substitution it is well to specify an original package, thus protecting your patient as well as yourself.

The Romance of Medicine

Sir Arthur Conan Doyle, speaking to some London medical students, told several stories illustrating what he called “the romance of medicine.”

The fashion of wearing wigs, for instance, was due to a skin disease which produced bald patches on the august head of Francis I. of France. He got a wig and his courtiers followed suit, just as they all whispered when he had an attack of laryngitis.

“One can trace for many years,” says the same authority in the *Lancet*, “certainly from 1802, the inception of that disease which killed Napoleon at St. Helena in 1821. In 1802 Bourrienne said: ‘I have often seen him at Malmaison lean against the right arm of his chair and, unbuttoning his coat and waistcoat, exclaim, ‘What pain I feel!’”

“That was perhaps the first allusion to his stomachic and

hepatic trouble; but from then onward it continually appeared, like Banquo at the banquet. He could scatter the hosts of Europe and alter its kingdoms, but he was powerless against the mutinous cells of his own mucous membrane.

SUFFERED FROM CANCER.

"Again and again he had attacks of lethargy, amounting almost to collapse at moments when all his energy was most required. At the crisis of Waterloo he had such an attack, and sat his horse like a man dazed for hours of the action. Finally the six years at St. Helena furnish a clinical study of gastric disease which was all explained in the historical post-mortem examination, which disclosed cancer covering the whole wall of the stomach and actually perforating it at the hepatic border.

"Napoleon's whole career was profoundly modified by his complaint. There have been many criticisms—not unnatural ones—of his petty, querulous and undignified attitude during his captivity; but if his critics knew what it was to digest their food with an organ which had hardly a square inch of healthy tissue upon it they would, perhaps, take a more generous view of the conduct of Napoleon. For my own part I think that his fortitude was never more shown than during those years—the best proof of which was that his guardians had no notion how ill he was until within a few days of his actual death.

"History abounds with examples of what I have called the romance of medicine. Look at the men, for example, who were the prime movers in the French Revolution. They were a diseased company—a pathological museum. Was Marat's view of life tainted by his loathsome skin disease, for which he was taking hot baths when Charlotte Corday cut him off? Was the incorruptible but bilious Robespierre the victim of his own liver? Was Couthon's heart embittered by his disfigured limbs?

REVOCATION OF EDICT OF NANTES.

"These are the problems where medicine infringes upon history, and these are the illustrations of the philosophy which is only open to the medical thinker. How many times do the most important historical developments appear to depend upon small physical causes? There is, for example, the case of the revocation of the Edict of Nantes. By this measure the whole history of France has been profoundly modified, because by that action there were driven forth the Huguenots.

"Now, how came Louis XIV., who had always held out upon

this point, to give way at last to the pressure of Mme. de Maintenon and his clerical advisers? The answer lay in one of his molar teeth. It is historical that he had for some months bad toothache, caries, abscess of the jaw, and finally a sinus which required operation, and it was at this time, when he was pathologically abnormal and irritable, that he took the step which has modified history. Great results may depend upon a king's jaw or a statesman's digestion."—*Mail and Empire*.

The glass blowing industry and the manufacture and repair of X-ray tubes has been entirely neglected in Canada until now, and the Thermos Bottle Co., Limited, 12-14 Sheppard Street, Toronto, have undertaken this work. They have expert German glass blowers and have all the special appliances necessary to manufacture and repair X-ray tubes. This departure should be appreciated by the profession, and in any communication mailed to them will receive prompt attention. The writer knows personally that they are doing most excellent work in X-ray repairs.

Important Physical Signs in the Diagnosis of Incipient Pulmonary Tuberculosis

P. H. Ringer (*New York Medical Journal*) refers to a unilateral shoulder droop, hollowing of the supraclavicular fossa, or its flattening without its becoming hollowed, etc. Palpation should be done with the pulps of two fingers. In percussion importance is attached to a shortening of the note with a heightening of the pitch over one apex. Another sign of value is the expansibility of the bases of the lungs, both in front and behind. The earliest respiratory change noted is granular, rude, or rough breathing.—*Medical Record*.

Dermatitis from Application of a Mercurial Lotion. TISSIER and CORPECHOT, *Le Progres Medical*.

A healthy woman, aged 32, was admitted to hospital at the end of her sixth pregnancy. She stated that after her previous confinements, except the first, she had suffered from an eruption of the lower abdomen, inner surface of the thighs, and around the anus. This she attributed to the use of lotions of corrosive sublimate for washing the parts during the puerperium. There

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The Canadian practitioner

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